DOCUMENT RESUME

ED 078 551 EA 005 218

TITLE	Superintendent's Advisory Committee on School Finance. Occasional Paper No. 1.
INSTITUTION	Illinois State Office of the Superintendent of Public Instruction, Springfield. Advisory Committee on School Finance.
PUB DATE	Feb 72
NOTE	155p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Advisory Committees; Court Litigation; Educational Equality; *Educational Finance; Educational Opportunities; Educational Policy; *Equal Education; *Equalization Aid; Financial Policy; *Measurement Techniques; Models; Research; Resource Allocations
IDENTIFIERS	*Illinois

ABSTRACT

This paper (1) defines the concept of equalization as it has been used in school finance, (2) examines some selected problems in the measurement of the concept of equalization, and (3) applies the concept of equalization to current State educational fiscal policy matters. The definitional problems are investigated by posing what are believed to be basic questions concerning the concept and then surveying the school finance literature for appropriate responses. A series of graphic models is constructed and used to continue studying the facets of the equalization concept. A technique for measuring equalization is outlined, and the use of this technique is illustrated. The application of the concept of equalization to current State educational fiscal policy matters is explored, and the paper concludes with a comment on the role the courts have played in shaping State educational fiscal policy. Related documents are ED 060 544, EA 005 217, and EA 005 219-220. (Pages 81 and 104 may reproduce poorly.) (Author/DN)

ED 078551

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Superintendent's Advisory Committee on School Finance

The Office of the
Superintendent of
Public Instruction
State of Illinois
Michael J. Bakalis
Superintendent

No. 1

August, 1972

EA 005 218

DEFINITION, MEASUREMENT, AND APPLICATION OF THE CONCEPT OF EQUALIZATION IN SCHOOL FINANCE

An Integration and Critique of School Finance
Research Conducted on the Subject of
Equal Educational Opportunity

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February, 1972
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> "The nations of our time cannot prevent the conditions of men from becoming equal; but it depends upon themselves whether the principle of equality is to lead them to servitude or freedom, to knowledge or barbarism, to prosperity or wretchedness?"
>
> Alexis de Tocqueville

The belief that state governments should organize their fiscal institutions in such a fashion as to try to achieve equalization of educational opportunity has been a pervasive value in American school finance studies for many decades (James, 1961; 1972). Two major problems are encountered when the general concept of equalization is examined. In the first place a definition of equalization acceptable to a majority of educational researchers at any given point in time appears to have been as illusive as the Golden Fleece. The record also seems to indicate that this prize has been lost to each successive generation of researchers. Fiscal argonauts are therefore forever condemned to launching new quests to give meaning to the equalization concept. Secondly, among those who have somehow managed to attain a modest amount of agreement concerning a definition, there appears to be very little consensus on appropriate administrative strategies and tactics for achieving such a goal.

This paper therefore has a three-fold purpose. The initial task is to explore the definition of the concept of equalization as it has been used in school finance studies. Definitional problems are investigated in the first two sections of this paper. This is done initially by the technique of posing what we believe are basic questions concerning the concept, and then surveying the school finance literature for appropriate responses. We then progress to the construction of a series of graphic models and continue the study of the facets of this concept using this heuristic and diagrammatic approach. The second task of this paper is to highlight some selected problems in the measurement of the concept of equalization. Therefore in the third portion of this paper and in appendix A we outline a technique for measuring equalization and provide some illustrations of the use of this technique. Since we are concerned with the practical as well as the more theoretical aspects of equalization, the fourth section of this paper and appendix B deal with the application of the concept to current state educational fiscal policy matters. The authors hope that state departments of education, state legislative committees, and special study commissions may find this final section of help as they struggle with demands for increasing equalization among school districts. Our efforts in this paper have been strongly influenced by the reasoning presented in a series of recent court decisions concerning educational finance (Hobson v. Hansen, 1967; McInnis v. Ogilvie, 1969; Serrano v. Priest, 1971; Van Dusartz v. Hatfield, 1971; Rodriquez v. San Antonio, 1971). The concluding statement therefore comments on the role of the court in shaping state educational fiscal policy.

Basic Questions

We shall start our examination by asking, "equalization of what?" A brief survey of school finance literature will suggest that answers to this question have changed as American society itself has undergone major historical transformations. In the very early fiscal literature it appears that the equalization of interest was the equalization of local tax burden to support education (Cubberly, 1905). It has been suggested that this early concern over local tax burden arose out of the increasing attempts of many states at the end of the last century to mandate minimum levels of school services everywhere within state boundaries without regard to differences in local resources (Burke, 1957). Later, with the wide adoption of the Strayer-Haig allocation system, tax effort was more specifically defined in terms of equalization of the local property tax required to support a specified level of expenditures (Strayer and Haig, 1923). This notion that two taxpayers should not be required to shoulder unequal tax burdens for the same level of educational services is still very much of social and legal interest as can be seen from the fact that this was one of the two causes for action stated by plaintiff in a recent California school finance case (Serrano v. Priest, 1971).

The Great Depression left its mark on the study of school finance as it did on the study of all other aspects of American public finance. Earlier writers had previously expressed concern over disparities between school districts with regard to: (a) expenditure levels and (b) service levels. Writing in the shadow of the Great Depression it seemed essential to Henry Morrison (1930) to highlight this type of inequality. Morrison had earlier documented the extent of inequalities in Illinois public schools and had proceeded to castigate that state's system of finance as "appropriate to pioneer days." But society moved away from the depression and while expenditure and service inequalities among school districts continued to merit study, the strong reform overtones were no longer present (Mort and Cornell, 1938; Mort and Cornell, 1941). Occasionally a volume would appear which cast a spotlight upon expenditure level and service level inequalities among school districts (Johns and Morphet, 1952). In the main, however, egalitarian goals in school finance were not of high priority in the 1950's as can be seen from this quotation from a widely adopted school finance textbook of that period:

> Indeed, equality of educational opportunity is not attainable in a single school system. It is not even desirable in a decentralized school system. What is desirable is a rising standard of educational services, not equality of services. This means that it may be more important to see that the able and willing can move ahead than to concentrate upon correcting the worst conditions. (Burke, 1957, p. 561)

It should be pointed out that the author of this statement has changed his point of view concerning a fiscal policy appropriate for the current period (Burke, 1969).

The 1960's presented a vivid contrast with the 1950's. James (1961) launched the first of what was to become a series of very important studies at Stanford. In his initial study at Stanford he reaffirmed inequalities of expenditure, tax effort, and fiscal capacity as an important focus for research. The sociologist Sexton (1961) published an important contribution to the study of service inequalities within urban school districts while McLure (1964) and Lane (1964) were exploring interdistrict inequalities. At mid-decade Benson (1965) published an important, popular, and widely distributed little book that also did much to restore the study of fiscal inequalities to stage center.

The real turning point, however, came shortly after mid-decade. At least three events were taking place which may well have changed forever the concept of equalization in the study of school finance. In the first place the social upheavals of the city ghetto and the militancy of minority groups had placed the entire matter of inequalities in the forefront of public inspection. Secondly, the impact of the Coleman report (1966) was beginning to extend far beyond academic sociological circles. Thirdly, a movement within the legal profession was afoot that, while it did not surface until later, would have profound implications for the equalization concept in school finance. By 1968 is was clear to many that the question, "equalization of what?" was going to be answered by a strong rededication to that ancient American dream, equalization of educational opportunity.

In rapid succession for the next four years there appeared a series of empirical studies and policy papers all dealing with various aspects of the inequality question. These studies differed greatly in design and purpose, and in the aspect of educational inequality chosen for investigation. All of them concluded, however, that a prime obligation of state departments of education was the utilization of the fiscal apparatus of the state to achieve equalization of educational opportunity (Coleman, 1966, 1968; Hickrod and Hubbard, 1968; Thomas, 1968; Garms and Smith, 1969; Guthrie, Kleindorfer, and Stout, 1971; Berke, Goettel and Andrew, 1972). Simultaneously the groundwork for a legal revolution against the state fiscal structure based on the equal protection clause of the fourteenth amendment of the U.S. Constitution was being articulated (Horowitz and Neitring, 1968; Wise, 1968a, 1968b; Coons, Clune, and Sugarman, 1969, 1970; Silard, 1970).

"Equalization of what?" is still a very important question. The activity chronicled above on the inequality front has served only to provide alternative responses to this question. As Johns and Salmon (1971) have pointed out, no precise definition of "educational opportunity" much less "equal educational opportunity" has existed now or in the past. In most of the studies cited previously inequality has been measured in terms of the wealth (variously defined) of school districts, the expenditures per pupil, the educational services provided students (including the quality of staff and the quality of facilities for delivering the services) and the tax effort exerted by citizens to attain the expenditure and service levels.

In more recent years several authors (Coleman, 1968, 1971; Jarret, 1971) have encouraged researchers to go beyond what they consider relatively weak measurements of school "inputs" and to measure instead equalization of "outputs." As statewide assessment and testing continues to spread throughout the United States this becomes more of a possibility. Equalization of school outputs, however, raises quite a number of thorny problems. To accomplish this type of equalization it is necessary to: (a) agree on outputs to be measured; (b) hold constant inputs over which school authorities have little control, and (c) manipulate inputs known to maximize achievement and over which school authorities have control. As a long-term goal of school finance research this type of equalization may be a pearl without peer. Unfortunately it can be doubted whether the present state of the art with respect to "educational production functions" will allow us to really do this in the near future (Barron, 1967; Guthrie, 1970; Levin, 1970). In the meantime we will still probably need studies of "inputs" to monitor our imperfect progress toward equal educational opportunity.

A second question, "equalization among whom?" while meriting no less attention than the first can be dealt with in less space. The response presented by many of the publications appearing in the last few years is "equalization among different socio-economic classes" (Garms and Smith, 1969; Kelly, 1970). But socio-economic class can be analyzed using several different units of analysis. Until very recently the school finance researcher simply assumed that his "proper" unit of analysis was the school district. That assumption can no longer rest unchallenged. If equalization is to be truly effective it is held now by some that the unit of analysis should not be the school district, but rather it should be the individual school or attendance unit (Levin, Guthrie, Kleindorfer and Stout, 1971). Within larger school districts there can be little doubt that great inequalities exist in educational inputs (Sexton, 1961; Havighurst, 1964; Goettel and Andrew, 1972). If equalization is desired among individual schools then radical surgery will be needed on the grant-in-aid systems of most states. The fundamental record keeping, charts of accounts, etc., would have to be changed since in many states fiscal data by individual attendance units is not at all available.

Perhaps a more serious challenge comes from those who would answer, "equalization among families." To explore this response fully would carry us into a discussion of voucher systems and far beyond the mission of this paper (Coons, Clune and Sugarman, 1970; Benson, 1971). It is clear, nonetheless, that if society wishes to move in the direction of an educational allowance for individual families and then proceed to use that instrumentality for the equalization of educational opportunity a major institutional reorganization of American education must be undertaken. The debate over whether voucher systems would move society toward equalization, or away from equalization, will likely continue for some time. The use of non-public school aid as an instrument of equalization is explored at some length in Erickson (1967).

In addition to the questions, "equalization of what?" and "equalization among whom?" it is apparent that we also need to explore what is meant by the word "equalization" itself. At first inspection it might seem that the answer was self-evident. Does not equalization simply mean reducing the variation in a set of measurements? Perhaps in a strict mathematical sense this is correct. It appears that in much of the school finance literature, however, the theoretical construct "equalization" has not been used in a univariate sense at all, but rather, in a bivariate framework. Provisionally one might then say that there are at least two responses to the question of an operational definition of equalization. One definition uses variation, but the other definition uses association. Since both variation and association are central theoretical constructs in the discipline of Statistics it will come as no surprise to learn that there are many possible techniques for measuring these fundamental notions. Likewise, many possible measurement approaches can be made to the matter of equalization. We shall return to the question, "what is equalization?" in a later section of this paper. Prior to that, however, we wish to see if further light can be cast on the definitional problems by the use of model building.

Normative Models

Policy analysis is alleged to entail: (a) the comparison of the "is" with the "ought" and (b) the recommendation of strategies for bringing the former into agreement with the latter. Such well-meant exhortations unfortunately assume that prior empirical research has established rather clearly just what "is" and that also a reasonable degree of consensus exists concerning the "ought." The study of school finance probably currently meets neither prerequisite. Recent judicial developments have encouraged us, nevertheless, to formulate a portion of this examination of the equalization concept in terms of a contrast between "actual" functions versus "desired" functions. These paired functions we have then termed "normative models." Since considerable disputation exists over the shape and nature of both the "actual" and the "desired" functions we offer this exercise primarily to encourage further research and further policy argumentation. Our efforts in this section have been greatly assisted by the discussion of several verbal models of equality of educational opportunity provided by Wise (1968a; 1968b). Our models have been given the labels, "permissible variance," "inverse allocation," "fiscal neutrality," and "fiscal intervention." The first term is borrowed directly from Wise and the third and fourth terms were suggested by Judge Miles Lord (Van Dusartz v. Hatfield, 1971).

The first model, shown in figure #1, consists of simply plotting the frequency of expenditures, or services, or outputs of school districts for some spatial entity, e.g., a metropolitan area, a state, the United States, etc. In this and all subsequent models the actual function is indicated by a solid line and the desired function is indicated by a dashed line. We are already in trouble with our fledgling models since studies of the shape of these distributions do not seem to have attracted great interest from researchers. More attention has been paid to the expenditure distribution than to the distribution of other variables. The most extensive data comes from Harrison and McLoone (1965). These data indicate that, for a distribution of all school districts in the United States in 1959-60, the median expenditure was reached from the lowest expenditure in thirty equal intervals but that it took thirty-eight more intervals to exhaust the distribution including a large open ended top interval. This study indicates, however, that the shape of the expenditure distribution does vary greatly from state to state. Some years earlier James

(1961, 1963) had noted this same variation in expenditure distributions among states and commented on the skewed nature of many of these distributions. Burkhead (1961) also noted skewness in the distribution of school finance variables within a single metropolitan area. With some reservations then we shall posit the "actual" distribution of expenditures in most states to generally be a distribution skewed in such a manner that there are more districts in the lower end of the distribution than in the upper end of the distribution. With equal tentativeness we shall further argue that the distribution desired by the framers of most equalization grants-in-aid was, and still is, to push the lower end of the distribution to the right, and in the process reduce both the skewness and the variance of the distribution.

The goal of this first normative model, then, is to reduce variation to some "permissible" range. Unfortunately, we do not know just how "permissible" is to be defined except that Wise (1968a) suggests at one point that the courts might not want to allow a high to low range of more than 1.5 to 1.0 should they opt to use this model to judge the equity of state K-12 financial systems. As of this writing we have had no judicial pronouncement equivalent to Judge Skelly-Wright's ruling that there could be no more than a five percent variation between expenditure levels of individual schools within a single school district (Hobson v. Hansen, 1967).

With all these normative models an important question is, "are we moving toward the desired function or away from the desired function with the passage of time?" A suitable answer demands a review of the literature of greater depth than we can give it here. However, we can at least suggest that the answer might depend upon which geographical frame of reference the researcher is using. Harrison and McLoone (1965) concluded that we probably were moving toward greater expenditure equality if the geographic area was the entire United States, or if one was exploring the variation among school districts within a majority of the states. However, these researchers also suggested that progress toward expenditure equalization seemed to have been greater in the 1940's than in the 1950's. Different results may be obtained, however, if the geographic focus of the research is expenditure variation within standard metropolitan statistical areas (Hickrod, 1967; Hickrod and Sabulao, 1969; Lows and Others, 1970), or if the variation is between central cities and suburbs (Berke, 1970), or if the major concern is with different categories of districts within metropolitan areas (Rossmiller, Hale, and Frohreich, 1970).

What are the strengths and weaknesses of this "permissible variance" model? If the distribution under analysis was to be school outputs perhaps measured in terms of achievement test scores and supplemented by some additional measures of school effectiveness it would probably be satisfactory at least to the stronger egalitarians among educational researchers. But the majority of research using this model has not been done in terms of school outputs, but rather in terms of school inputs. This presents a dilemma. It is at least possible that the reduction of variance in outputs might require an increase of variance in inputs. Without the addition of a wealth dimension it is also difficult to interpret any increase in the variance actually observed. Does such an increase mean the wealthier districts moved further away from the central tendency of the distribution? Does it mean the poor districts did or did not move? None of these matters can be known without abandoning the univariate framework for measuring equalization.

The oldest bivariate model of equalization is the one illustrated in figure #2 which relates general state aid to school district wealth in an inverse fashion. Wealth is usually defined as property valuations per pupil but it can also be defined in terms of income or a combination of property valuations and income. The controversy in school finance circles over the definition of "wealth" or "fiscal capacity" is of long standing (Burke, 1957, 1963, 1967). Some researchers have expressed considerable dissatisfaction over the continued practice of defining "wealth" or "fiscal capacity" solely in property valuation terms (Hickrod and Sabulao, 1969). The shape of the actual general aid function is believed in many states to be a negatively sloping line with a rather sharp breaking point at the range of districts which no longer qualify for equalization aid but do continue to qualify for flat grants or for guaranteed minimum state aid (James, 1961, 1963). This aid function can probably be approximated by a logarithmic transformation of either the wealth or the aid variable, or both. Curiously, however, while the departure from linearity of the state aid-wealth function has long been known, the curvilinearity of that function has not been taken into consideration when decisions are made concerning appropriate statistical techniques with which to measure the extent of equalization. We shall comment further upon the curvilinear property of the state aid function in the next section of the paper.

Figure #2 is the "conventional" model of equalization, the one most widely recognized among practicing educational administrators (Doherty, 1961). The model has been used for several research purposes. For example, it has been used to study the distribution of funds under several types of state aid formulae (Benson and Kelly, 1966; Sampter, 1966; McLure and Others, 1966; Farner and Others, 1968; Hempstead, 1969; Waren, 1970). It has also been used to study the distribution of state aid among school districts in metropolitan areas at more than one point in time (Hickrod and Sabulao, 1969). Recently this model was used to compare the distribution of funds within states for all fifty states in the Union (Briley, 1971). The general bivariate linear relationship is known to be negative, quite strongly so in some states.

As might be expected there is much less agreement concerning the desired function. Much of the controversy in state legislatures takes place over how steep the slope of the desired function, illustrated by dashed line A in figure #2, will be. In many states, the local districts receive either flat grants or equalization grants, but not both (Johns, 1969). Some authors have held that this practice in fact discriminates against poorer districts and that these poorer districts should receive flat grants in addition to their equalization grants (Coons, Clune, and Sugarman, 1970). Should the flat grant portion happen to be quite large this could result in quite a gain for poor districts as indicated in the dashed line B of figure #2. Johns and Salmon (1971) have constructed a typology for the evaluation of equalization effects built partially upon this inverse allocation model, but with weightings for the proportion of state to local funds, and the degree to which the grants take into consideration variations in local costs. The strengths and weaknesses of the inverse allocation model are entangled with how the model is measured and discussion of this point is therefore reserved to the third section of the paper.

Figures #3 and #4 illustrate two models of equalization of more recent origin. The two-part model in figure #3 which we have labeled "fiscal neutrality" is drawn from the argumentation presented in Coons, Clune, and Sugarman (1970) and also from recent court decisions (Serrano v. Priest, 1971;

Van Dusartz v. Hatfield, 1971). The words of Judge Lord describe the desired function: "Plainly put, the rule is that the level of spending for a child's education may not be a function of wealth other than the wealth of the state" (Van Dusartz v. Hatfield, 1971). One possible interpretation of that rule could be that all funds for K-12 education should be distributed by a very large flat or bloc grant with no local contribution at all from local school district resources. This would result in one type of full state funding. Not necessarily the best type, in our opinion. The desired function resulting from this strong interpretation of the neutrality rule could be represented by the dashed line labeled "A" in figure #3a. It has, however, also been suggested that the courts may not be so rigid in their interpretation of the "fiscal neutrality" doctrine with the result that any state system which makes an honest effort to "level up" its expenditures, while still allowing the wealthier districts to "add on" something from local resources, will be allowed to pass unscathed before the sword of constitutional justice (Greenbaum, 1971). If this milder interpretation proves eventually to be correct then an "acceptable" if not a "desired" function might prove to be something like dashed lines "B" or "C" in figure #3a.

The courts as Wise (1968a) has observed have a strong preference for operating in the negative. "Thou shalt not" is a more comfortable legal posture than "Thou shalt." Bearing this in mind the neutrality doctrine can be restated to say that no state may operate an educational fiscal system in which expenditure levels are primarily determined by the local wealth of the school district. In other words the courts may be more concerned with the solid line in figure #3a than in any possible dashed lines. Unfortunately that solid line is also the most well researched function in the history of modern school finance. There are literally scores of studies that demonstrate that no matter what variables are placed in multivariate demand models, the wealth of the local school district is almost always the best single indicator of local demand for education (Hickrod, 1971). Surely it is ironical that the United States courts have chosen to attack one of the strongest empirical relationships known to exist among school finance variables. The judicial "lions under the throne" certainly have their work cut out for them.

The second component of the fiscal neutrality model is more difficult to handle. Commentators have pointed out that the courts are less clear about tax inequalities than about expenditure inequalities (Silard, 1971). It appears, however, that the rule might be: "tax rate may not be a function of wealth but it may be a function of expenditure level." If that is a correct interpretation then the vertical dimension of the model is not simply tax rate but rather tax rate adjusted for differences in expenditure level. The desired function again would appear to be the straight line similar to the line in the first component. This is illustrated in figure #3b. With respect to the actual function we can only speculate. The simple bivariate relationship between wealth and tax effort is negatively sloping in some studies (Berke, Goettel, and Andrew, 1972); however, this is not so clear in other studies. In the absence of proof to the contrary, it might be assumed that once a control has been effected for expenditure levels the sign of the slope might remain negative, but the magnitude of the slope would decrease sharply.

The last normative model also consists of two components. In recent years the number of academicians willing to state, sometimes in a rather forceful manner, that American society should be spending more on the education of children from poor families than on the education of children from wealthy families has increased (Guthrie, Kleindorfer, Levin, and Stout, 1969; Levin, Guthrie, Kleindorfer and Stout, 1971). A related and perhaps even larger body of analysts have stressed the great educational needs of the poor, particularly the needs of the urban poor (Berke, Goettel, and Andrew, 1972; Kelly, 1970; Garms, 1969). In most cases the raison d'etre for this type of allocation pattern is sociological or socio-political in nature; i.e., to reduce social stratification and increase social mobility (Hickrod and Hubbard, 1968). It is further argued that this type of allocation pattern should produce a situation in which educational achievement should be substantially equal among socio-economic groups by the end of the

K-12 experience (Coleman, 1968). This school of thought, which we have termed "fiscal intervention," has been illustrated in figures #4a and #4b. Obviously it is closely related to compensatory education and could just as easily have been termed compensatory finance.

In figure #4a we have a situation which would exist if Judge Lord's decision had read, "the rule is that the level of educational achievement may not be a function of wealth other than the wealth of the state." We hasten to remind the reader that the justice from Minnesota did not say this and in fact, at least to our reading of the 1971 cases cited earlier, none of these decisions has gone this far. Therefore one might think of this as a "beyond Serrano" policy position. The actual functional relationship between educational product (usually measured as educational achievement) and wealth is fairly well documented in school finance research (Benson, 1965; Burkhead, 1967; Dunnell, 1969; Van Fleet and Boardman, 1971), although the number of research studies on this topic does not begin to equal the number of research efforts directed toward exploring the relationship between expenditures and local wealth. The normative model resulting from the juxtaposition of the desired function with the actual function is similar to model #3a, and much of what was said of model #3a also applies to model #4a.

In model #4b the actual function is the same as in model #3a. The desired function is subject, however, as are all the desired functions discussed in this section, to considerable uncertainty. If more should be spent on the poor, how much more? The most common parameter given is that twice as much should be spent on the poorest district as is spent on the wealthiest district (Guthrie, Kleindorfer, Levin, and Stout, 1969). The desired function could take other values. For example, the program cost differentials for compensatory programs relative to standard programs provided by McLure and Pense (1970) suggest a 1.68 ratio for grades 6 and below, and a 1.83 ratio for grades 7 through 12. If, for the purposes of this general discussion, one assumes that no compensatory students are present in the wealthiest district and that the poorest district contains nothing but compensatory students, and if one further assumes that the presence of compensatory students is a direct inverse linear function of wealth, then the desired functions are those indicated by dashed lines A, B, and C in figure #4b. McLure and Pense (1970) dichotomized compensatory programs treating the detention schools for severely maladjusted as a separate and much more costly program category.

An important concern here is whether one of these models, specifically the fiscal neutrality model, precludes and prohibits the adoption of the other models. Does the emerging judicial doctrine of fiscal neutrality, e.g., the quality of a child's education may not be a function of wealth other than the wealth of the state, render illegal and inoperative the permissible variance, inverse allocation, and fiscal intervention models? We believe it does not. The fiscal neutrality doctrine would appear not to apply to the inverse allocation model since it addresses itself to the total expenditure-local wealth function rather than to the state aid-local wealth or the federal aid-local wealth relationships. Nor does it appear to apply to the permissible variance model since the variance may, or may not, be connected with wealth differences.

The fiscal intervention model presents a more complex problem. The courts have never really indicated just what they mean by the word "function." Ultimately the word may need to be defined in future litigation with the aid of expert testimony from mathematicians and statisticians. For the moment it may suffice to say that when used by the layman without an adjective it usually means a positive or direct relationship rather than an inverse or negative relationship. The argumentation flowing from the lack of equal protection due to indigence in some of the cases cited by the courts suggests the thinking is in simple rectilinear terms; i.e., the more wealth the more services and the greater protection versus the less wealth, the less services, and the lesser protection. Since the actual function of total expenditure and local wealth in no way approaches an inverse function in the United States, the point may be purely academic. Should it ever arise in actual litigation, however, it might be argued that in the fiscal intervention model the wealth variable is really acting as a substitute for a needs vector. The courts have demonstrated that they have no desire to try to handle the needs concept in these school finance cases (McInnis v. Ogilvie, 1969; Rodriquez v. San Antonio, 1971). This does not mean, however, that they would not accept the more measurable and more justiciable wealth variable as a substitute for educational needs. The only assumption necessary is that poor children are educationally needy children.

Throughout this discussion of normative models we have merely indicated the desired and actual functions to be either linear or curvilinear functions of wealth. We have not indicated how such functional relationships might be measured. Such an omission causes no problem for general theoretical discussion. However, the empirical investigation and evaluation of state educational fiscal policies requires much more attention to operational definitions and to measurement techniques. Without work at this level of definition the full meaning of the equalization concept would continue to elude our grasp. To that task we now turn.

Measuring Equalization

Measurement problems can be discussed in a fashion similar to the normative models; that is, in univariate or in bivariate mode. In the univariate mode the researcher is often measuring variation in expenditure per pupil among districts. Variation could also be measured in terms of fiscal capacity or with respect to output or services provided if these data were available. The methodological question here is variation from what? The conventional answer has been variation from the mean of the set of measurements being examined. Hence the variance (the mean squared deviation from the mean) has been used. Since relative variance is frequently of concern the square root of the variance, the standard deviation, is often expressed as a percent of the mean. This descriptive statistic is sometimes referred to as the "coefficient of variation" (James, 1961, 1963). On occasion, a somewhat less exact statistic based on the difference between the first and third quartiles, the interquartile range, is used. Again, since relative variation is of interest the ratio of the interquartile range to the median is used (Harrison and McLoone, 1965).

There are two limitations on these procedures. In the first place since we have reason to believe that these distributions may be skewed, a change in the shape of the distribution may be more revealing than a change in variation. Secondly, both these techniques depend upon the assumption that the variation of interest is that measured from the central tendency of the distribution. In the light of the influences discussed in the first two sections of this paper it might be more appropriate to measure variation, not from central tendency, but from a condition of perfect equality.

One straightforward measure of variation from equality is simply the mean deviation from equal expenditure, or equal property valuation, etc., or the mean square deviation from this benchmark (Johns and Others, 1971). There is, however, another technique available which has the advantage of having both a graphical and a numerical representation. This is the Lorenz curve and an associated numerical expression, the Gini index or "index of concentration." This latter measure of deviation from perfect equality has frequently been used in economics (Morgan, 1962) and somewhat less frequently in sociology (Duncan and Duncan, 1955), biology (Duncan and Duncan, 1957), and political science (Alker, 1970). In only a few instances does it appear in school finance literature (Harrison and McLoone, 1965; Hickrod, 1967).

When using the Lorenz curve and Gini index in a univariate mode, a rank order of districts from that district having the least expenditure to that district having the greatest expenditure is formed. A Lorenz curve is a plotting of the cumulative proportion of districts against the cumulative share of aggregate expenditure accounted for by these districts. If all districts had the same expenditure per pupil a 45 degree line would result as indicated in figure #5. Fifty percent of the districts would then account for fifty percent of the aggregate expenditures and the line would pass through point A. However, if fifty percent of the districts spend only twenty-five percent of the aggregate expenditures a curve is formed passing through point B. As districts depart from perfect equality the curve departs from linearity, moving to the right.

While the Lorenz curve is a good graphic device one needs a numerical value to assign to it. Basically, the area between the diagonal and the curve represents the amount of inequality and this needs to be expressed relative to the area of the triangle formed by the diagonal. Appendix A displays a mathematical development of a formula starting from this assumption and concluding with the following computational formula:

$$G = \sum_{i=1}^{n} (X_{i-1} Y_i - X_i Y_{i-1})$$

where: x = cumulative proportion of districts

y = cumulative proportion of expenditure (state aid, achievement score, etc.)

As the curve moves away from the diagonal the magnitude of G will increase. Therefore, in this particular mode, low magnitudes of G indicate equalization and high magnitudes of G indicate disequalization.

The principal problem in the bivariate mode centers around the extensive use of the Pearson product moment linear correlation coefficient. Although there are a large number of studies in circulation which use this descriptive statistic, it has some serious limitations for measuring equalization. In the first place this correlation coefficient measures only the strength of the linear relationship. If the relationship is non-linear as is the case with the relationship between state aid and wealth of the district, use of the correlation coefficient is not appropriate. Secondly, even if the assumption of linearity holds, the correlation coefficient cannot measure the slope of the line. For example, a high correlation between expenditure and wealth of the district indicates the existence of linear relationship between these two variables, but it does not show how much the expenditure changes with a particular change in wealth (Tufte, 1969). One must perform a regression analysis to find the slope of the line. The third limitation is the effect of extreme measurements on the correlation coefficient. Only a few districts receiving large amounts of state aid may affect the value of the coefficient drastically. The fourth limitation springs from the fact that each district has the same weight in affecting the magnitude of the correlation. The smallest district in Illinois, for example, has the same weight as Chicago. This limitation, however, could be overcome by weighting the data before computing the correlation coefficient. Given these limitations we are inclined to discourage the use of Pearson product moment linear correlation coefficient in the measurement of equalization.

What then can be substituted for the correlation coefficient? Graphic profiles are effective but they do not yield a single numerical value which can be used to describe equalization within a state (McLure, 1964, 1966; Briley, 1971). Barkin (1967) and Wilensky (1970) have suggested a second usage of the Lorenz curve and Gini index that looks promising. This technique is illustrated in figure #6. Although there are only two dimensions visible on the graph, there is a third hidden dimension. The three variables considered are as follows:

(i) Units between which equalization is to be achieved, e.g. pupils, districts, state, etc.

(ii) Criterion for differentiation between these units, e.g. wealth, income, size, etc. The data are ranked in increasing order of this criterion.

(iii) Factor that is to be equalized, e.g. state aid, expenditure, achievement score, etc.

In figure #6, the vertical axis represents the cumulative proportion of students ranked by wealth and the horizontal axis represents the cumulative proportion of state aid. In this usage should each district receive the same amount of state aid, e.g. a condition of flat grants without weightings, fifty percent of the students ranked by wealth would receive fifty percent of the state aid and the line would pass through point A. However, should aid be distributed in inverse proportion to wealth, then fifty percent of the students ranked by wealth might receive seventy-five percent of the aid and the curve would pass through point B. The Gini index takes a value of zero in case of flat grants but has a positive value between zero and one for any other state aid formula that tends to help the poor districts. The higher the magnitude of the Gini index, the more favorable is the distribution of the state aid for the poor districts.

The real strength of this technique lies in its ability to compare the disequalizing effects of local resources with the equalizing effects of state aid. Figure #7 highlights the disequalizing effects of local resources. It should be noted that in this figure the curve is above the diagonal and that the Gini index is negative. This is due to the fact that the wealthy districts raise more money through local resources than do the poor districts. Figure #8 shows the combined effect of local resources and state aid. The curve is still above the diagonal and the Gini index is still negative but smaller in magnitude. This means that the equalizing effect of state aid does not completely balance the disequalizing effect of local resources.

Another use of the Lorenz curve is in exploring the equalizing effects of variations in many different parameters in the general aid formula. This usage is illustrated in figures #9 and #10 using Illinois data for the year 1968-69 for unit districts (K-12) of that state. The calculations in this example are based on a "pure" foundation or Strayer-Haig formula and the effects of various Illinois adjustments that exist are not shown here. In this example the flat grant is not taken into consideration. Lorenz curves are drawn for three levels of qualifying tax rate and two levels of foundation level. As can be seen from the diagrams, with the foundation level at $520 and the qualifying tax rate at $1.08 the Gini index stands at .096 (figure #9). Should the foundation level be raised to $600 and qualifying rate remain at $1.08 the index falls to .077 and the curve moves near to the 45 degree line (figure #10). However, should the foundation level be raised to $600 and the qualifying rate also be raised to $1.36 the index rises to .111 and the curve moves away from the diagonal (figure #10). It should be noted that raising the qualifying rate while holding the foundation level constant results in higher Gini index meaning greater equalizing effects of the state aid.

From these illustrations it should be clear that the Lorenz curve has many advantages over other existing methods of measuring equalization. As described in the first example, the Lorenz curve allows three variables to be considered in one graph. Secondly, no assumption as to the linearity of functions is involved. This makes it applicable to both linear and non-linear situations. The whole graph can be reduced to one number--the Gini index--for comparison purposes. This technique is equally applicable to different definitions of equalization.

The measurement of equalization is surely a topic worth greater development by researchers. However, we do not wish to leave the impression that this subject is so esoteric that it yields only to investigation by measurement specialists. Simple percentages can often be revealing. For example, using 1971-72 state aid information in Illinois one can discover that the poorest half of the elementary students in that state receive approximately 63 percent of the funds going to all elementary schools. The poorest half of the high school students receive approximately 65 percent of the funds going to high school students. However, the poorest 46 percent of the students in the unit districts (K-12) receive only 50 percent of the funds going to students in all unit districts. This situation exists due to the fact that the almost one half million students in the city of Chicago school system are considered in the top half of the wealth distribution in terms of property valuation used for the calculation of 1971-72 state aid. As Berke, Goettel, and Andrew (1972) have pointed out, neither Chicago nor a great many other central city school districts will receive very much state aid as long as the measurement of wealth or fiscal capacity remains property valuation per pupil.

Application

State educational administrators, particularly those who are facing a court ordered revision of the fiscal structure of their state, are apt to be much more interested in the application of the concept of equalization than with efforts at more precise definition and measurement. It is toward this pressing practical problem that we direct our remaining comments.

The question we shall attempt to answer in this section is simply, "what policy and administrative alternatives does a state have if a major commitment has been made to provide more funds to students in the poorer districts of the state?" The possibility of such a commitment depends upon the political and social composition of each individual state. We think it realistic to assume, however, that more state departments of education will be interested in seeking answers to this question in the near future. Some state departments have already indicated the high priority they intend to give to actions which will increase equal educational opportunity (Bakalis, 1972). It remains to be seen whether state legislatures will concur on the priority to be assigned to increasing equalization.

The actual allocation patterns brought about by the alternatives described in the following paragraphs should be evaluated in terms of the normative models of equalization previously discussed in this paper. Very likely some of the quantitative approaches mentioned in the preceding section would also be utilized in this evaluation process. Although it is our view that the federal government does have a responsibility to help the states achieve equalization within their boundaries we shall restrict our commentary here to those strategies and tactics that can be carried out by state departments and by state legislatures without federal assistance. There would appear to be four of these overall or general strategies: (a) full state funding, (b) district reorganization and consolidation, (c) manipulations of general purpose grant-in-aid systems, and (d) utilization of certain types of categorical grants. Each will be discussed in turn.

The heart of the equalization problem lies in the American practice of using unequal local resources to support education. It is therefore quite tempting to consider cutting the Gordian Knot by supporting K-12 education entirely from state taxation with no local contribution being allowed at all. State assumption or "full state funding" is not a new idea in school finance (Morrison, 1930). It is fair to say, nevertheless, that this proposal has gained more supporters in recent years than was the case in past decades. It should be noted that many modern proposals for full state funding are not really "full" at all in the sense that they do not contemplate 100 percent state funding. Provision is usually made for the addition of certain funds derived from local taxation to be laid on top of the state support. The crucial point here is that these local "add ons" are relatively small and strictly supervised. The controls on local contributions can be a flat rate such as 10 percent of the state grant (ACIR, 1969; Milliken, 1969) or the controls can be in the form of more elaborate schemes by which districts may tax at different rates depending on the support level they have selected for their children. Some of these latter plans provide that if the controlled local tax yields an excess over a specified figure the balance of the yield must be surrendered to the state for distribution to less fortunate districts (Green, 1971). These proposals are frequently based upon ideas advanced by Coons, Clune, and Sugarman (1970) and therefore collectively might be referred to by the term they used, i.e., "district power equalization."

Since there are tight controls on local contributions and the state share of K-12 support is very large, if not actually 100 percent, the manner in which the state allocates these funds becomes even more important than it is under present partnership arrangements by which both the state and the local governments provide funds for public education. Several alternative methods of allocation under full state funding are possible. We shall mention only a few of these. James (1972) favors a distribution scheme based upon individual educational programs, essentially working a planning-programming-budgeting approach into the allocation process. This would make the K-12 allocation process not greatly different from that allocation process used in higher education in many states. Benson (1971) suggests that aids-in-kind provided by intermediate districts or regional service centers accompany the general purpose bloc grants and that much of the aid to poor districts be channeled through this aid-in-kind approach.

Johns and Others (1971) have demonstrated that as the percentage of state aid rises and cost differentials for special types of educational programs such as compensatory education, special education, vocational education, etc. are used as student weightings, large bloc grants can deliver a considerable amount of funds into poor districts without explicitly taking into consideration differences in local school district fiscal capacity. As state aid approaches 90 percent they report little difference between the large bloc grant approach and the more traditional grant-in-aid formulae.

A full state funding arrangement which allocated funds on the basis of very large bloc grants per student and which further weighted these students on the basis of program cost differentials would, in our opinion, contribute to the equalization of educational opportunities. Such a scheme might also be very well received by the courts. Unless one is willing, however, to accept a considerable error variance in the accuracy of these student weightings, such an approach does require a good unit cost study in the state which is considering the adoption of such an approach to K-12 allocations.

Full state funding, or even any of the various proposals calling for "almost" full state funding, would require a considerable increase in state revenues. Realizing this, full state funding advocates usually also recommend that the state governments enter the property tax field once the local educational special district government has no need of this revenue source for educational purposes. It has also been suggested (Thomas, 1968; Walker, 1961) that it might be possible for the state to assess and tax only certain kinds of property, such as industrial and commercial valuations, leaving the residential valuations to local tax collectors. To ascertain the impact of such a scheme one needs to collect data on the distribution of various types of property valuations i.e., industrial, residential, commercial, among local school districts. While these data are often available by counties, only a few researchers have been able to assemble it by school districts (Harvey, 1969).

A second general strategy is to encourage local district reorganization and consolidation in the hope that this will eliminate small districts with inadequate local tax bases. Consolidation can, indeed, make a meaningful contribution to the equalization problem, but only if wealthy and poor districts are found in relatively close proximity to one another. No giant strides are made toward equalizing educational opportunity by the merging of a number of equally poor school districts. Unfortunately, in some of our larger metropolitan areas, districts do tend to form separate sectors of affluence and disadvantagement (Hickrod and Sabulao, 1969). Reorganization can also make a meaningful contribution to equalization provided the new intermediate districts, which are usually part of most reorganization plans, are provided with the facilities to aid poor local districts within their jurisdictions. Since a proper exposition of consolidation and reorganization matters take more space than can be allowed here we shall discuss this strategy no further. It should be pointed out, in any event, that consolidation and reorganization are often advocated, not on equity or equalization grounds at all, but rather on grounds stressing the efficient allocation of resources and the minimization of costs relative to scale of operations (Egelston, 1969; Thomas, 1971; Hooker and Mueller, 1970; Hickrod and Sabulao, 1971).

Despite the obvious attractions of full state funding for equalization of educational opportunities, and notwithstanding impressive academic support for this position, we feel that at least in the immediate future many states will continue to retain some type of joint state-local fiscal arrangements for K-12 education. We base this estimate on five considerations. First, the expense connected with moving to full state funding, or even "almost" full state funding, is such that it would necessitate the adoption of new taxes in some states and/or a considerable increase in rates on existing taxes in many more states. Second, the notion of full state funding for K-12 education raises serious questions concerning the funding of other very important public services at the state level. With budgets in all states quite tight, full state funding for K-12 education would mean much greater difficulties in funding other needed public services such as welfare, health, transportation, police, etc. It will also not be overlooked by junior college administrators that full state funding of K-12 might curtail their very rapid growth and it will certainly not be overlooked by university-based researchers that full state funding of K-12 might well mean an even further tightening of college and university budgets. Third, full state funding will also be opposed by both professional educators, laymen, and legislators who continue to sincerely believe in the benefits long alleged to adhere to local control of the K-12 educational jurisdiction (Ross, 1958). This is true even though it is difficult to rigorously prove that these benefits do, in fact, exist. School board associations are skeptical of a change in institutional structure that might reduce their sphere of decision making and it is not at all clear that state teacher organizations will support a system that places teacher negotiations at the state level. Fourth, the notion that "lesser associations" as de Tocqueville termed them, can operate both in the public sector as well as in the private sector to provide benefits to their members not provided to the general population is deeply ingrained in American custom and tradition if not in constitutional law. Such a tradition will not be summarily abandoned. Finally it will surely not be easy to erase over seventy-five years of educational fiscal history in the United States, no matter what the judicial pressures to do so.

Rather than an immediate adoption of full state funding what we think is more likely, and certainly more politically acceptable, is an acceleration of the state share of support for the K-12 jurisdiction and a reduction of the local contribution. It should be noted that this increasingly rapid shift to more state aid may be caused, not by any great desire to achieve equal educational opportunity, whether court mandated or not, but by the desire of much of the electorate to move some of the tax burden from the local property tax to the state sales tax and the state income tax. The judicial demand for equal educational opportunity may simply provide the escape valve for a property tax pressure that has been building up for some time.

The anticipated increase in state funding will likely be used to "level up" the educational offerings of the poorer school districts. There appear to us to be at least two different tactics within the overall strategy of manipulating the general purpose allocation system. One of these has already been alluded to in the discussion of full state funding. It is certainly possible to "level up" the educational offerings of the poorer districts by large general purpose bloc grants distributed on a weighted student basis and with some provision for limited local "add ons" from local revenue sources. While this notion has been circulating for some time in school finance circles we feel that not enough research has been done on the relative advantages and disadvantages of weighted bloc grants versus conventional grant-in-aid formulae. A second, and more familiar tactic, is the manipulation of the existing grant-in-aid formulae that now distribute funds from the state to the local levels. The heavy hand of history being what it is we suspect that the manipulation of the existing formulae will be tried first, and then only secondly will more unconventional methods be adopted if the formulae manipulation proves inadequate to meet court mandates. On that assumption we shall devote the next several paragraphs to the somewhat esoteric subject of manipulating educational grant-in-aid formulae.

There have been three types of general purpose educational grant-in-aid formulae in use in the United States since the mid-sixties. The terminology is unfortunately not standardized among fiscal researchers but the labels most commonly used for these formulae are: (a) Strayer-Haig or foundation level, (b) percentage equalizer, and (c) resource equalizer or guaranteed valuation. There are several specific treatments of the strengths and weaknesses of each of these types of grant-in-aid approaches available in school finance literature (Benson, 1964; Cornell, 1965; Hubbard and Hickrod, 1969; Johns and Others, 1971). In addition almost any standard school finance textbook feels constrained to offer many pages, sometimes whole chapters, on these grant-in-aid forms (Benson, 1968; Johns and Morphet, 1969; Garvue, 1969). Other methods of allocation, for example, the application of linear programming techniques, have been suggested (Bruno, 1969), but they have not won legislative acceptance. Appendix B provides a very simple statement of each of the three major formula types used in the United States. It should be pointed out that almost every state has now made many modifications in the particular formula they have adopted. These modifications are the result of compromise between the political forces at work in all state legislatures and in the various committees and commissions that recommend financial legislation for adoption.

The important point we wish to stress here is that any one of the three formula types now in use can be manipulated to provide a considerable amount of state aid to poor school districts, and, conversely, any one of the three can be manipulated to provide a very modest amount of assistance to poor school districts. It is true that school finance researchers have speculated, and will continue to speculate, as to whether one of the three forms might tend, in the long run, to provide more aid to poorer districts than the others, and there has been some investigation to try to establish this fact (Benson and Kelly, 1966; Johns and Others, 1971). However, we tend to concur with Coons, Clune, and Sugarman (1970) that the more important consideration is the manipulation of the formula rather than the general type of formula that has been adopted. The pattern of monies allocated to local school districts has historically been a result of compromises within legislative bodies and between the legislative and the executive branches of state government. It now appears the judicial branch has also decided to take a seat in this formulae game.

Bruno (1969) is correct in his judgment that these grants-in-aid systems are nothing more than simplistic mathematical functions consisting of a few constants and a number of variables. Since they are simple functions of this nature one can either manipulate the constants, manipulate the variables, or manipulate both constants and variables. By far the most common method of manipulating the variables is by adding weightings to that variable which is used to measure the number of students in a local school district. The trend in this direction was established some time ago by the late Paul Mort and his associates (1960). The distribution of money, of course, can be effected by weighting variables in the formulae other than pupils. We shall describe the manipulation of constants in each formula type first, and then proceed to the topic of manipulation of variables. It may be useful for readers not familiar with these formulae to consult appendix B as the discussion unfolds.

The foundation or Strayer-Haig formula has two constants: (F) the expenditure per pupil established as a "floor" or "foundation" for educational services, and (r) the required tax rate (see appendix B). In a broad public finance sense this kind of grant-in-aid is related to notions of minimum wages, guaranteed family income levels, and other "minimum" social welfare concepts. Professional educators have strenuously tried to escape from this "minimum" aspect of the Strayer-Haig system by stressing the need for a "quality" foundation level that is considerably higher than any "minimum" notion (McLure and Others, 1966). The second constant (r) is variously called the "qualifying rate," "mandated tax rate," "state charge back," and "state computational rate." The legal aspects of this tax rate differ from state to state and account for some of the difference in terminology. In all states, however, which use this particular formula, the rate sets the amount of local contribution needed to support the foundation level.

State aid can be directed to poorer districts under a Strayer-Haig formula by increasing the magnitude of both constants. Unfortunately, what tends to happen in many states is that (r) is not increased at the same rate as (F). In the past some state legislators have been reluctant to raise the tax rates in the formula on the grounds that effort should be determined in the local districts rather than at the state capital. There has also been a problem of conflicting local tax ceiling legislation. The necessity of manipulating both constants, e.g., (F) and (r), is one of several weaknesses of the Strayer-Haig approach. For these and other reasons it is not uncommon to find both constants kept at very low levels despite the fact that educational costs continue to rise. When this occurs, regardless of why it occurs, the result is to provide less funds to the poorer districts.

The percentage equalizer has the advantage of having only one constant to manipulate, e.g., the .5 which establishes the amount of state and local contributions in the district of average wealth. As this constant is lowered more funds are directed toward poorer districts. When the parameter is raised less funds are provided poorer districts. What frequently happens to this type of formula is that (E) the local expenditure per pupil has a low ceiling placed upon it. This is often done out of a fear that local school boards will authorize excessive frills which, under the workings of the formula, the state will have to also support. A more important concern in recent years has been that under a percentage equalization formula the state will share in the results of all local collective bargaining with teachers. In very poor districts it would be true that under percentage equalization the state would be picking up most of the costs of teacher organization agreements. Some state legislators have therefore felt that local boards situated in poor districts might commit the average state taxpayer to more than he really wishes to be committed to relative to teachers' salaries.

When ceilings are placed on percentage equalization formulae, for whatever reasons, the effect is to convert the equations into distribution systems not greatly unlike the Strayer-Haig formula. The lower the ceiling the less the funds directed to poor districts. Percentage equalizers also are sometimes accompanied by legislation which specifies that districts will receive a certain guaranteed amount irregardless of what the formula computation produces. This is equivalent to a flat grant and has the same anti-equalization effects. It should be noted parenthetically that very large bloc grants and conventional flat grants do not have the same effects. As previously mentioned very large bloc grants have the power to equalize upward while flat grants used in conjunction with conventional grants-in-aid formulae naturally disequalize.

All three formulae indicated in appendix B can be rewritten to provide greater equalization. Taking the percentage equalization formula as an illustration, one can drop the .5 entirely from the expression and change the V-subscript-s to a V-subscript-g; that is, form a ratio between the local district valuation and a valuation guaranteed at a much higher level than the state average. Such a formula will have much stronger equalization effects. It is also possible to operate a sort of split-level foundation approach with one foundation level much greater than the other. When this is done the intent is usually to bribe the local districts into doing something that allows them to qualify for the higher foundation level.

The resource equalizer also has only one constant to manipulate, e.g., the V-subscript-g, which is the guaranteed valuation. The higher this guarantee is set the more funds are distributed to poor schools. The lower it is set the less funds go to poorer schools. Of course, the higher the guarantee the more the state revenue needed to flow through this particular allocation system. States desiring to explore this particular system should watch for some peculiar effects of (r) the local tax rate. In the first place districts which are property wealthy, for example, industrial enclaves, will have low tax rates for education and hence receive little state aid. Unfortunately these districts are frequently inhabited by low income families who have never taxed the wealth available to them. It may be that this low tax effort is due to a low priority placed on education, but it could also be due to inability to contend on an even basis with local industrial giants for control of the school board. In all these allocation systems the state must guard against systematic underassessment of local property in order to qualify for greater state aid. Perhaps this danger is even more pronounced in the resource equalizer since there is, in effect, a double reward for underassessment; once in the difference between the state guaranteed valuation and the local valuation, and then again in the resultant higher tax rate which occurs from the underassessment. Proponents of reward for local effort, or of local control, may still find this formula attractive, however, for other reasons.

One of the most straightforward ways to direct state money into poor districts through the manipulation of variables is to enter an income measurement into any of the three formulae. This can be done in various ways and defended on various grounds. For example, an income measurement can be used to weight students on the grounds that low income students have greater educational needs than students coming from districts dominated by high income homes. It is also possible to weight the property valuation variable on the rationale that a good measure of wealth or fiscal capacity in modern urbanized society should include more than simply property valuations. There are also several possibilities with regard to the kind of income variable that might be used. For example, it is possible that a variable measuring average income in a district, for example median family income, will not provide as much of a distribution to districts with serious poverty pockets as will a variable measuring a portion of the income distributed in a district, e.g., percentage of families or students below a given income level. The problem here is that the family income distribution in many school districts is thought to be highly skewed although little research seems to exist on this point. In spite of the fact that most states have now adopted a state income tax it still seems difficult in many states to get good income data. School district income data derived from census sources is useful for general research purposes (Stollar and Boardman, 1971), but not accurate enough for use in state allocation formulae. In many states, however, a large number of variables which are known to correlate highly with income can be added to formulae with allocation results not greatly different than those that would be obtained if the income variable itself were used.

A number of these income correlates are also the variables that, when added to almost any formula, will deliver aid into large urban school districts (Berke, Goettel and Andrew, 1972). For example, adding the aid to dependent children count to the formula will assist central city school districts. Another approach is to add a density variable to the formula. If the intent is to aid the poorer districts this should be a true density measurement; that is, pupils divided by square miles. While size, that is, simply the number of pupils, is correlated with lack of wealth, the relationship is not nearly as strong as that between density and poverty. Achievement test scores are also correlated inversely with wealth and therefore if the results of state-wide testing or state-wide evaluation are incorporated into the allocation formula the poorer districts will be aided. Such a practice is open to the charge that the state would be assisting inefficient school districts as well as poor school districts. Garms and Smith (1969) have therefore outlined an ingenious scheme for using, not the actual achievement test scores, but rather the achievement scores predicted by the presence of social variables associated with low achievement. Such a scheme also has the potential for rewarding very efficient school districts. Adding a municipal overload variable, that is a variable measuring the amount of load on the local tax base from non-educational public services, will also aid the poorer districts (Lindman, 1964; Peterson, 1971). The most common method of doing this is by deflating the property valuation by an index relating educational revenue to non-educational revenue.

Urban school districts must operate a number of high cost programs to meet the needs of their heterogeneous student populations. Many of these high cost programs are related to the incidence of low wealth. In fact, it may be argued that many of the wealth variables are but indirect measurements of educational needs and that the differential cost approach is a more direct method of approaching individualized educational needs than are the wealth variables (McLure and Pense, 1970). Of course some programs, for example programs for gifted children, are probably inversely correlated with poverty and disadvantagement. A change in the method of counting pupils, from average daily attendance to average daily membership, will also assist urban districts since poor districts have greater truancy rates. A more drastic move would be to drop the student measurement entirely and substitute a per capita approach. There is some precedent for doing this since other non-educational grants are distributed on this per capita basis. Such a move would aid urban districts that have been losing pupils to the suburbs.

As can be seen the number of variables that can be added to any formula and the number of manipulations that can be performed on these equations is extensive. The real question then is not how poor districts can be aided, but whether there exists a political consensus to do the thing in the first place. In this connection students of the politics of education might find it profitable to speculate on the fact that at least a good number of the manipulations we have outlined can be expected to assist not only urban districts but poor rural districts as well. Almost a decade ago McLure (1962) observed that formula weightings tended to aid central cities and rural areas more than suburbs and independent cities. Rural-urban, upstate-downstate coalitions are difficult to achieve and maintain but it is clear that both rural and urban areas have much to gain in any state department or legislative actions taken to strengthen equal educational opportunity. Affluent suburbs of course have much less to gain by any state department or legislative adoption of the equalization goal. All this was true prior to the advent of the recent court cases, and it may be that the recent actions of the judiciary will only serve to catalyze latent political combinations that have been present in public education for many years.

The final overall or general strategy consists of giving poor districts assistance through categorical or special purpose grants. For example a growing number of states do operate their own compensatory education programs in addition to the federal title I, ESEA, program (Burke, 1969). It is also true that vocational grants tend to place an appreciable amount of funds into the poorer districts. Although it does not occur in all instances, almost any categorical grant can be manipulated so that the categorical or special purpose grant also directs more funds into poorer districts than into wealthier districts. For example, the grant for transportation in Illinois is written so that the poorer rural districts receive more than do the wealthier rural districts.

Many educational fiscal analysts have something akin to a chronic allergy toward large numbers of categorical or special purpose grants. In the first place these grants tend to so complicate the fiscal structure that it is difficult to analyze the total state educational fiscal picture. In the second place there is some evidence that the overall effect of all categoricals taken together is probably disequalizing rather than equalizing (Briley, 1971). In the third place the overhead costs relative to scale of operations make many categorical grants economically inefficient. Fourthly, the amount of red tape and administrivia attached to some of these grants is discouraging, especially to the smaller and poorer school districts. Finally such grants reduce the local administrator's area of discretionary authority to act in such a way to achieve the most efficient allocation of resources. The standing of special purpose or categorical grants among some educational fiscal analysts is probably just about equivalent to the low esteem of earmarked taxes among general public finance analysts.

One cannot be sure, however, that state legislatures will allow professional educators to indulge their allergy to categoricals. In the first place many legislators feel that categorical grants may be the only way of "seeing to it that the funds are spent the way we intended for them to be spent." This may be true; however, the matter of discerning legislative intent from some of the existing categoricals is not easy. As with all other legislation the language of the special purpose bills is a result of compromise and that compromise, while necessary, does not generally contribute to administrative clarity. In the second place special purpose grants often carry with them specific provisions for evaluation of the programs they fund. This tendency is present in many federal special purpose or categorical grants and similar provisions have been written into some state categoricals. Until educators are willing to accept state-wide testing, evaluation, and accountability, the state legislatures may well find the evaluation provisions of the categoricals to their liking and retain them on these grounds alone.

The Courts

What we have offered here is a treatment of the equalization concept based upon an integration and critique of school finance research. We did not intend, nor are we indeed qualified, to offer a legal analysis. We hope, however, it will not be judged too presumptious to conclude this study with an expression of opinion concerning the role of the courts.

It is currently fashionable in certain educational circles to complain about the alleged desire of the courts to "run the schools." It is also popular in certain legislative circles to declare loudly against the alleged judicial encroachment upon legislative prerogatives relative to public policy decisions in education. In our opinion the judicial branch could not and can not escape the responsibility for evaluating the operation of the public schools in terms of basic principles of both constitutional and common law. To do otherwise, to turn a blind eye upon the rights of parents and children as they interact with the largest of our public bureaucracies, would be to make a mockery of the independent judiciary and the fundamental notion of separation of powers. Evaluation, however, as every student of educational research is taught, assumes valid criterion measurements. To put the thought in terms more comfortable to the legalists, a justiciable standard must be found. In this paper we have argued that justiciable standards can be explored by constructing normative models consisting of contrasts between desired functions and actual functions. There are certainly other approaches to constructing justiciable standards. We have some evidence that the courts are not only willing to listen to such inquiries, but indeed are desirous of having them presented.

The gratuitous warning we would offer the judiciary is simply this. The search for evaluative standards which are amenable to judicial inquiry is certainly enough of a burden without also attempting to take on the task of spelling out in detail all of the fiscal techniques necessary to come into compliance with a given court order. We do not therefore believe that the courts should attempt to spell out the details of the relief to be provided to plaintiff in these class action finance suits. We note that Judge Lord (Van Dusartz v. Hatfield, 1971) and Judge Goldberg (Rodriquez v. San Antonio, 1971) appear to concur with this point of view. An order that relief should be forthcoming from the executive and legislative branches, and a continuation of jurisdiction until that relief is forthcoming, should be enough to meet the demands of justice. One thing is certain; the question, "when are the schools integrated?" has taken a great deal of judicial time. The question, "when are the schools equal?" is, if anything, even more difficult to handle and promises to demand an even greater allocation of scarce judicial man-hours.

In all of these fiscal matters both defendants and plaintiffs will produce their "expert witnesses," not to mention a number of amicus curiae briefs filed either on behalf of, or in collaboration with, additional "authorities." The public finance of education is certainly no more of a science than educational psychology, sociology, or indeed any of the other social and behavioral sciences currently being professed. Therefore the courts will find that respected economists and educators will not concur completely on whether a set of fiscal arrangements does, or does not, contribute to equal educational opportunity. Fortunately the courts have developed ways of handling conflicting expert testimony. Anglo-Saxon jurisprudence still assumes that the "rule of right reason" will rise above trial by combat of learned advocates and more recently warring social science knights. Let us hope this bedrock assumption is sound. If it is not we are all in trouble.

APPENDIX A

DERIVATION OF COMPUTATIONAL FORMULA FOR THE GINI INDEX

If we are to plot y_i's vs. x_i's on a diagram as shown in figure 1-1, the curve would slack away from the diagonal if inequality exists. The degree of slackness of the curve is a measurement of the degree of inequality. The slackness may be represented by area A in figure 1-2. The derivation of the formula for the Gini Index is as follows:

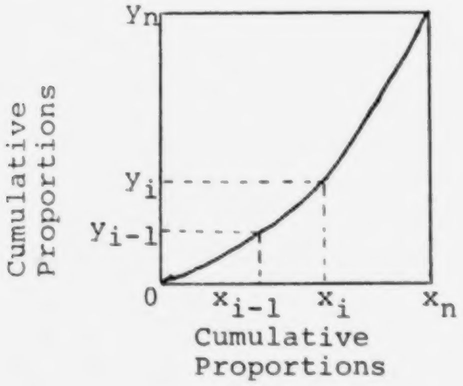

Fig. 1.1

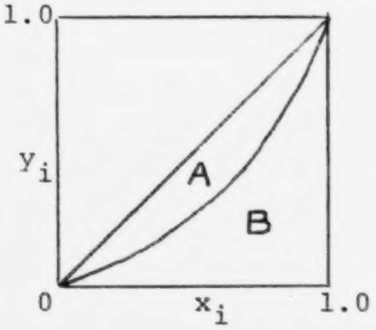

Fig. 1.2

Gini Index
$$G = \frac{\text{Area A}}{\text{Area(A+B)}}$$

$$= \frac{0.5 - \text{Area B}}{0.5} \qquad (1)$$

$$= 1 - 2 \text{ Area B}$$

From Fig. 1-1

$$\text{Area B} = \sum_{i=1}^{n} \frac{(x_i - x_{i-1})(y_{i-1} + y_i)}{2} \qquad (2)$$

Substituting Eq.(2) into Eq.(1), we get

$$G = 1 - \sum_{i=1}^{n} (x_i - x_{i-1})(y_{i-1} + y_i)$$

If we are to expand the terms above, we will have

$$G = 1 - \sum_{i=1}^{n} (x_i y_{i-1} - x_{i-1} y_{i-1} + x_i y_i - x_{i-1} y_i)$$

$$\begin{aligned} &= 1 - (x_1 y_0 - x_0 y_0 + x_1 y_1 - x_0 y_1 + x_2 y_1 - x_1 y_1 + \\ &\quad x_2 y_2 - x_1 y_2 + \cdots\cdot + \ldots + x_n y_{n-1} - x_{n-1} y_{n-1} + \\ &\quad x_n y_n - x_{n-1} y_n) \end{aligned} \qquad (3)$$

The results of the expansion are that

1. All $x_i y_i$ terms for $i=1,2,\ldots,n-1$ are cancelled.
2. The term $x_0 y_0$ is equal to zero.
3. The term $x_1 y_1$ is equal to one.

Therefore, Eq. (3) becomes

$$\begin{aligned} G &= (x_0 y_1 - x_1 y_0) + (x_1 y_2 - x_2 y_1) + \cdots\cdot + (x_{n-1} y_n - \\ &\quad x_n y_{n-1}) \\ &= \sum_{i=1}^{n} (x_{i-1} y_i - x_i y_{i-1}) \qquad (4) \end{aligned}$$

APPENDIX B

THREE FORMULAE FOR GENERAL PURPOSE EDUCATIONAL GRANTS-IN-AID USED IN THE UNITED STATES

The following three formulae are used in various states for the purpose of distributing state funds inversely to the property valuation of local school districts. Each state has made extensive modifications of the "pure" forms presented here.

I. The Foundation or Strayer-Haig Formula:

$$G = FP - rV$$

where:

F = Expenditure per pupil established by the legislature as the level at which education will be supported in the state

P = Number of pupils in local school district

r = Required local tax rate, sometimed called the "qualifying rate."

V = Property valuation in the local district

II. The Percentage Equalization Formula:

$$G = EP\left(1 - .5\,\frac{V_i}{V_s}\right)$$

where:

E = Local expenditure per pupil

P = Number of pupils in local school district

V_i = Property valuation in the local district per pupil

V_s = Property valuation in the state per pupil

III. The Resource Equalization Formula:

$$G = P\ [r\ (V_g - V_i)]$$

where:

r = Educational tax rate in the local school district

V_g = Property valuation guaranteed by the State per pupil

V_i = Property valuation in the local district per pupil

P = Number of pupils in local school district

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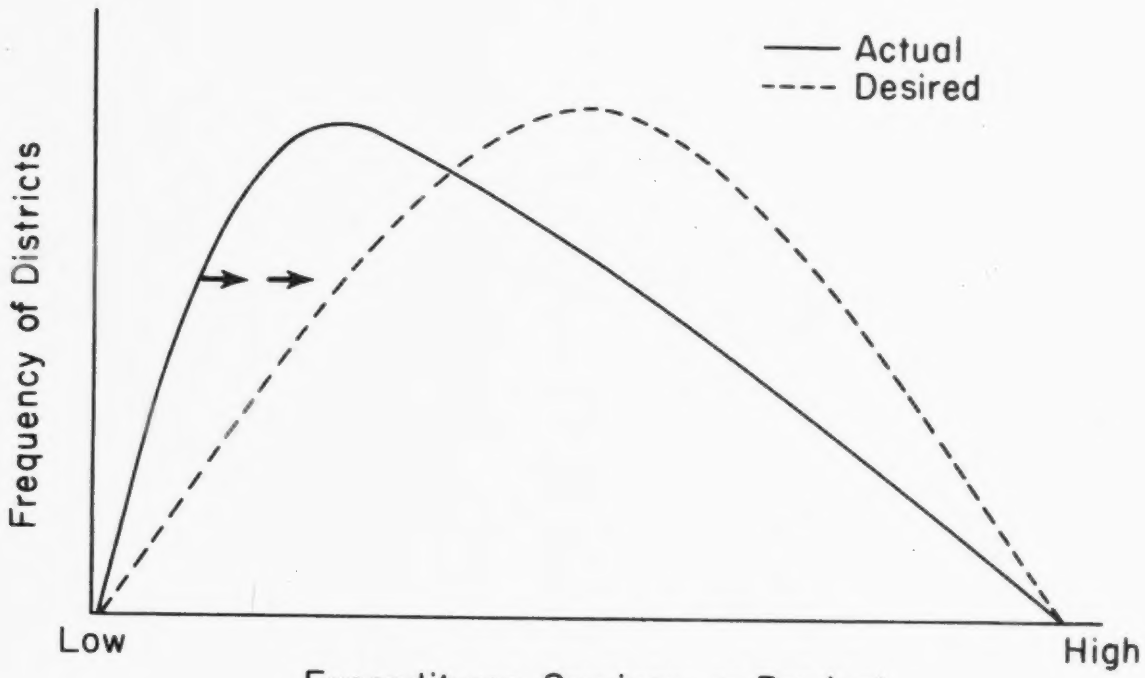


Figure 1: Permissable Variance Model

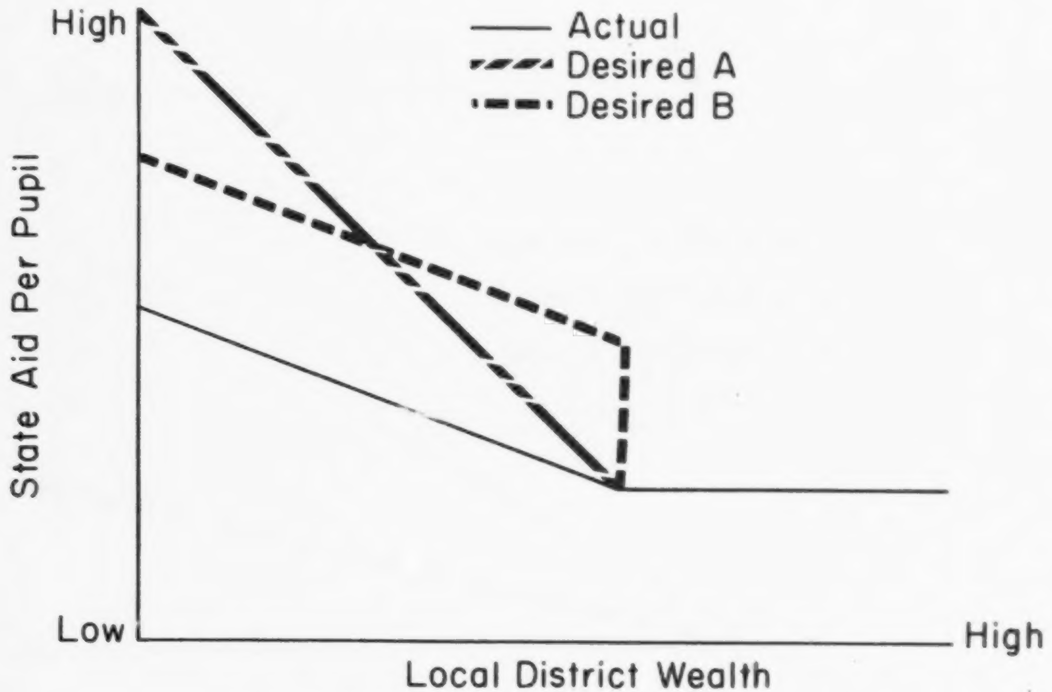


Figure 2: Inverse Allocation Model

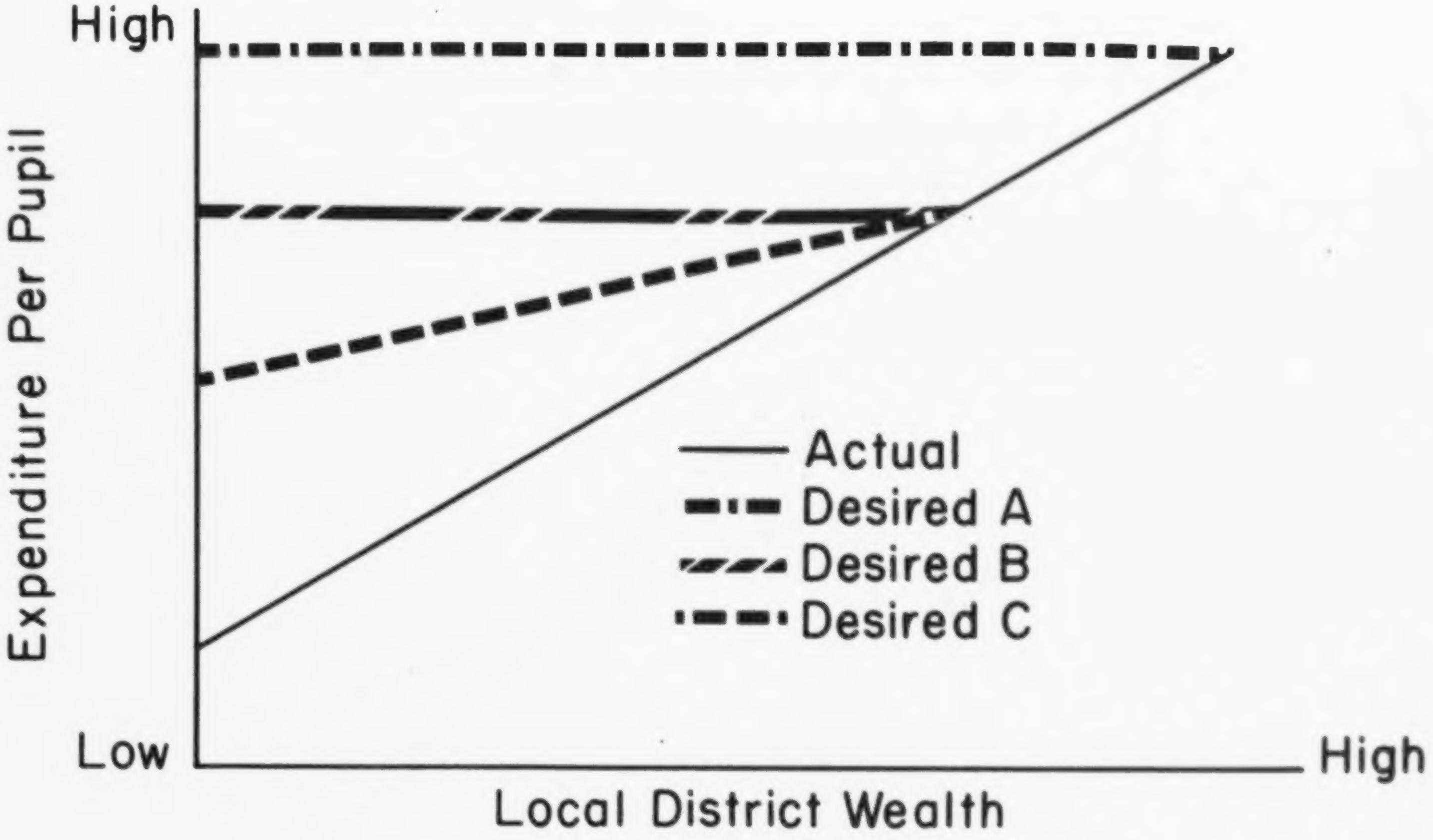


Figure 3a: Fiscal Neutrality Model

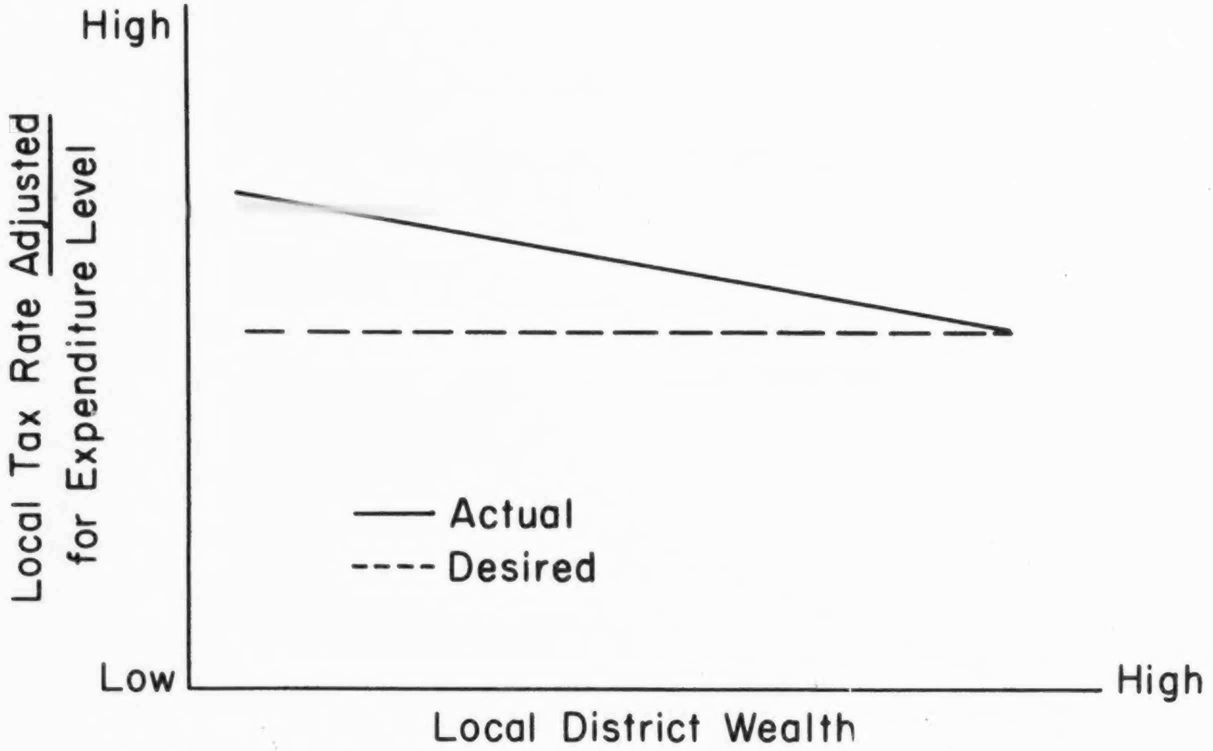


Figure 3b: Fiscal Neutrality Model

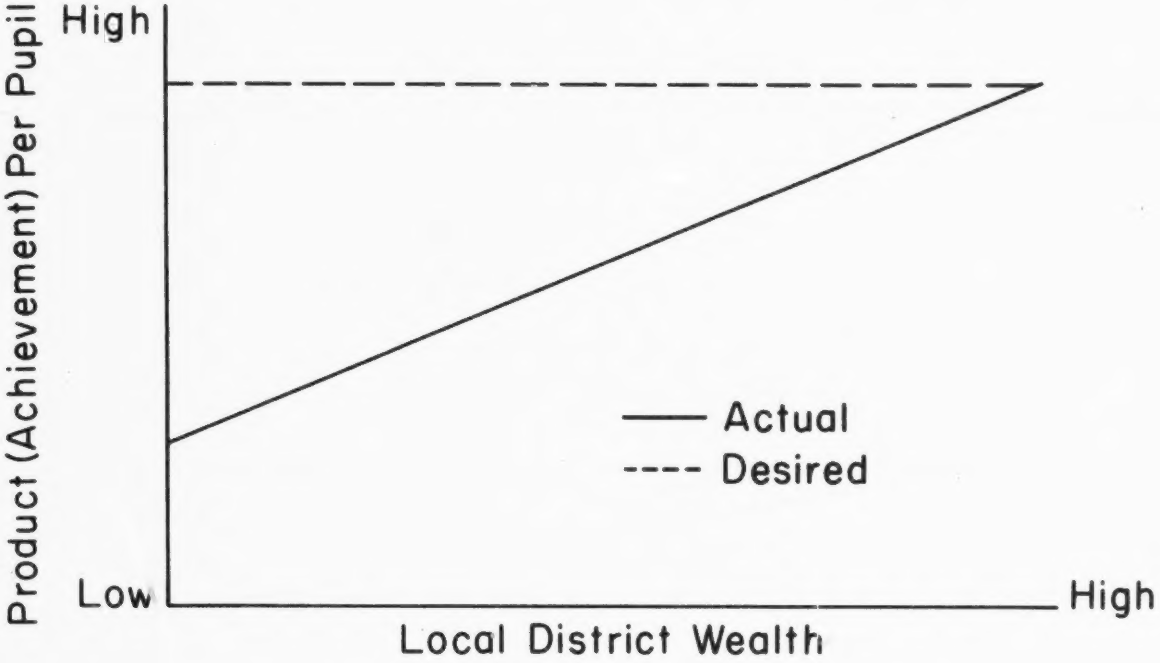


Figure 4a: Fiscal Intervention Model

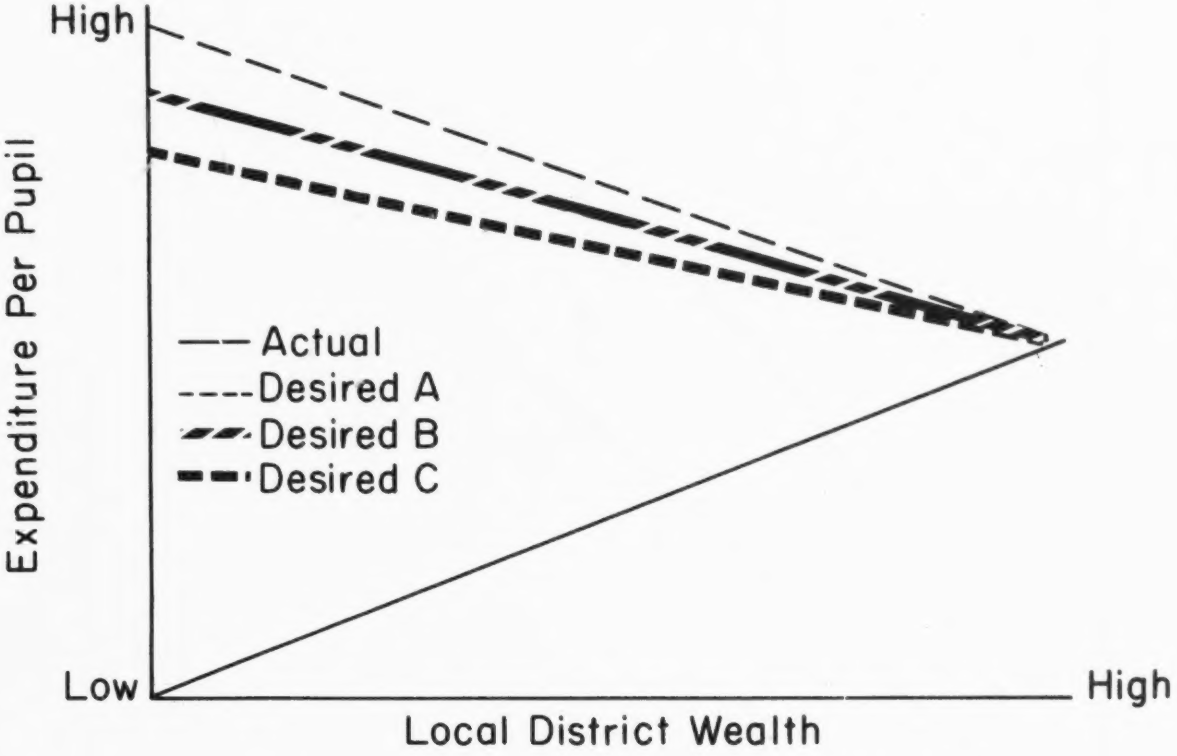


Figure 4b: Fiscal Intervention Model

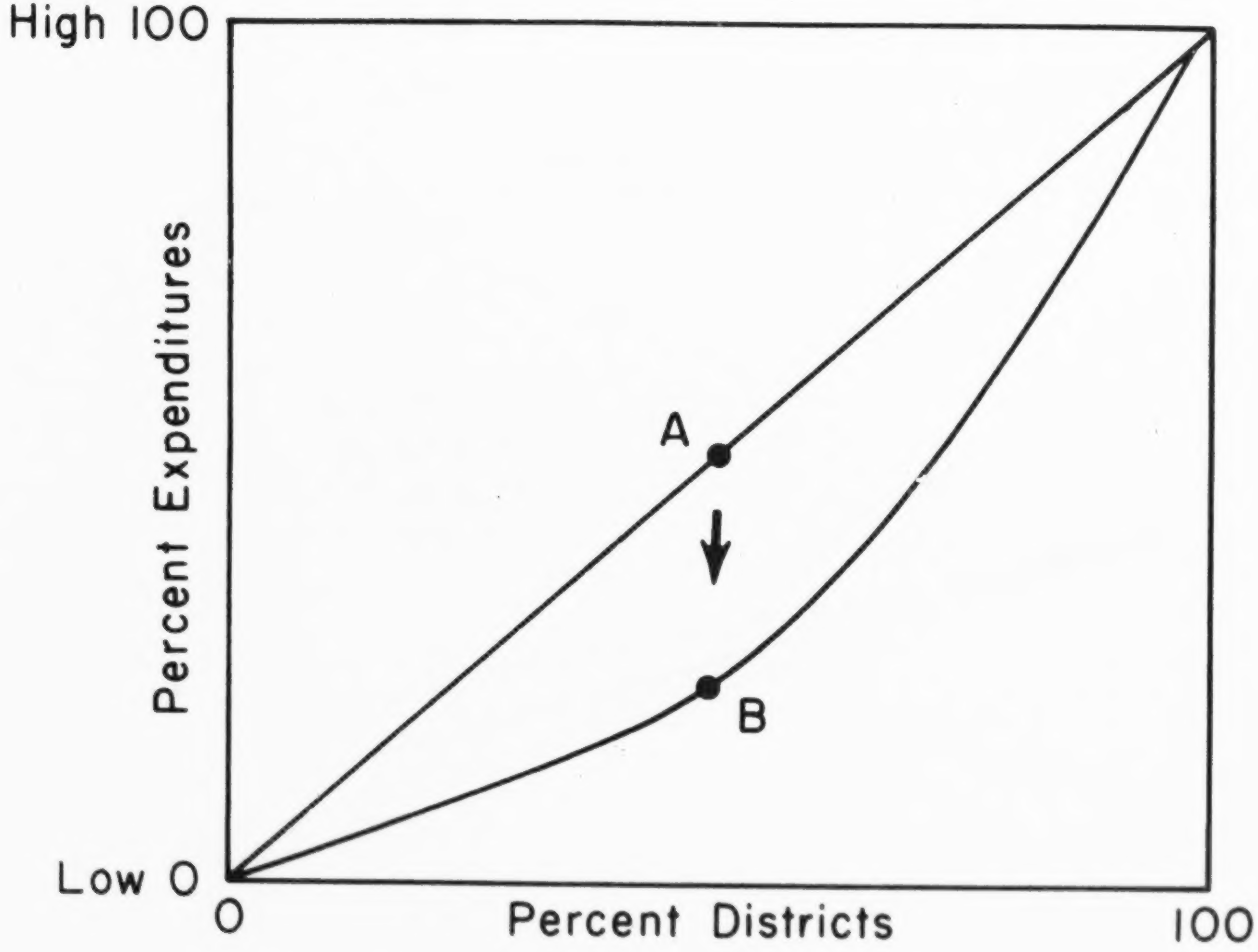


Figure 5: Lorenz Curve: Univariate mode

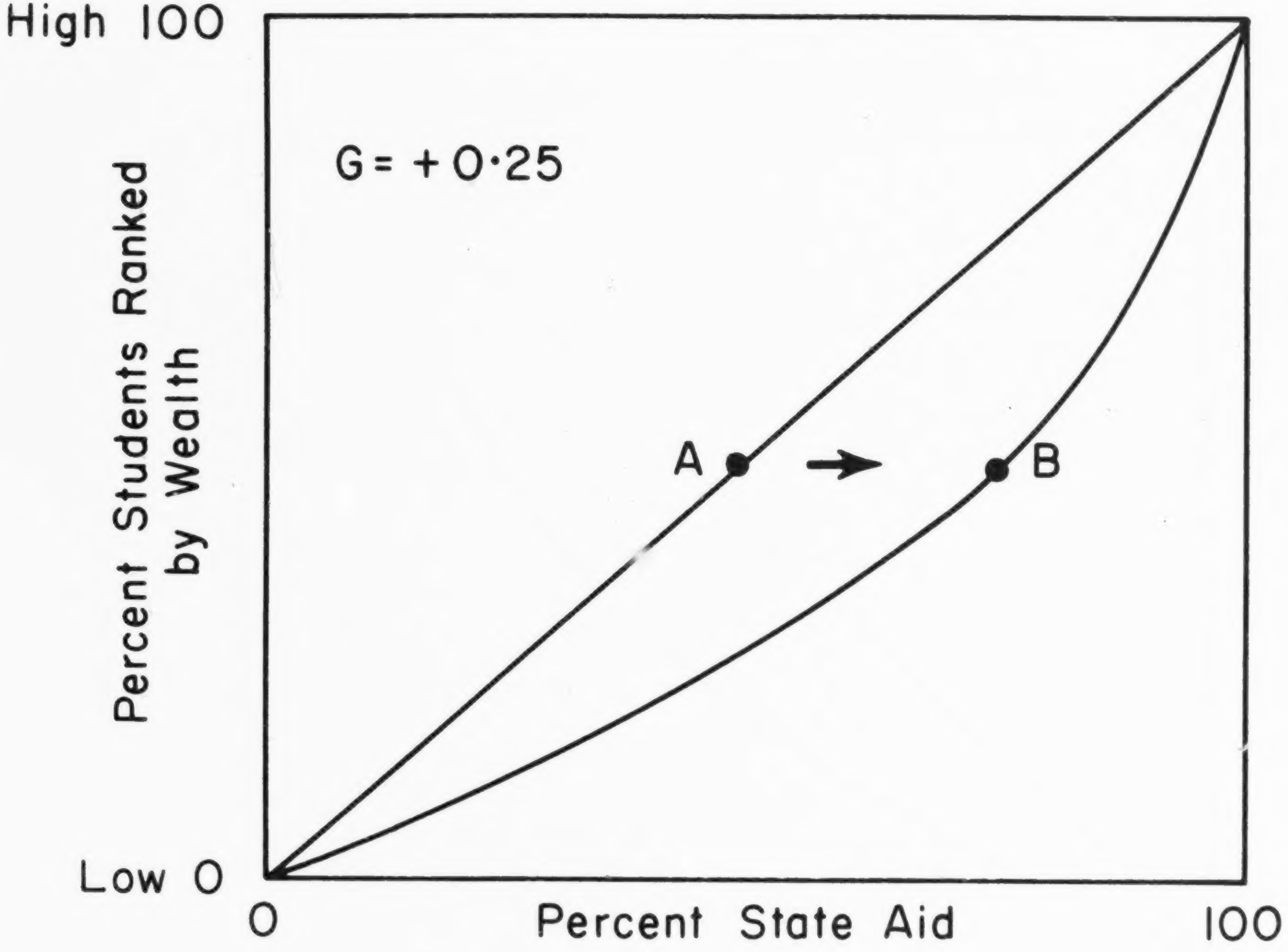


Figure 6: Effect of State Aid shown by Lorenz curve in Bivariate Mode.

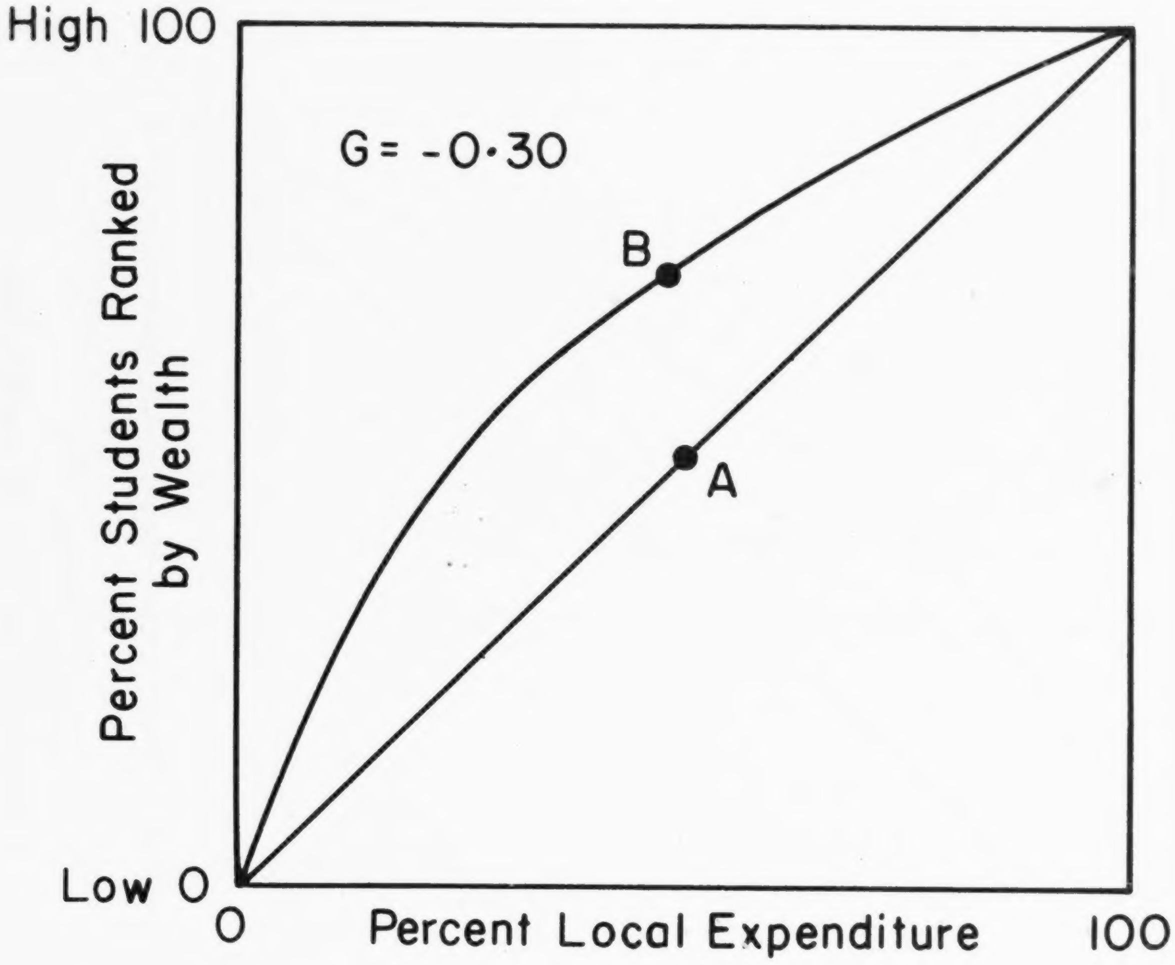


Figure 7: Disequalizing Effects of Local Resources shown by Lorenz curve.

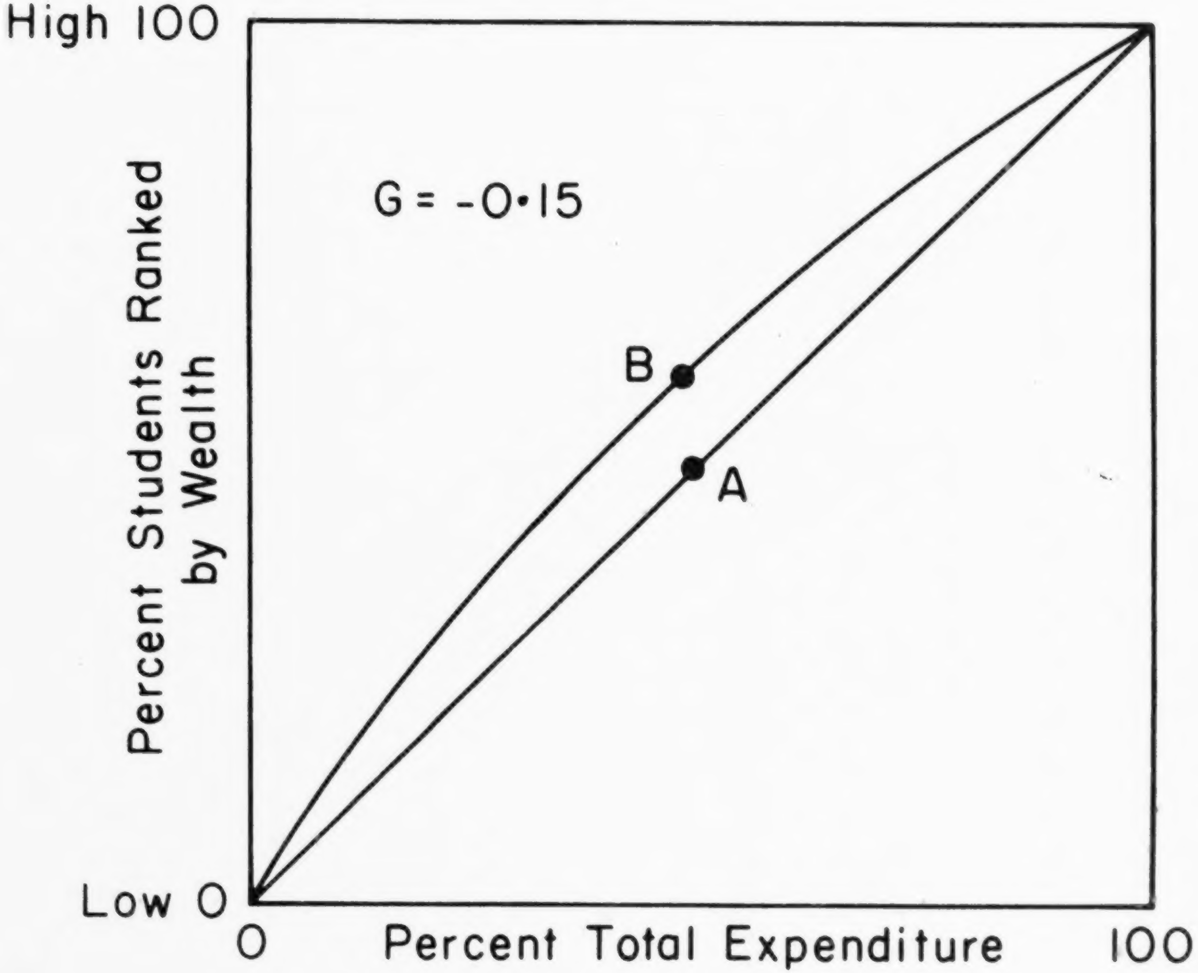
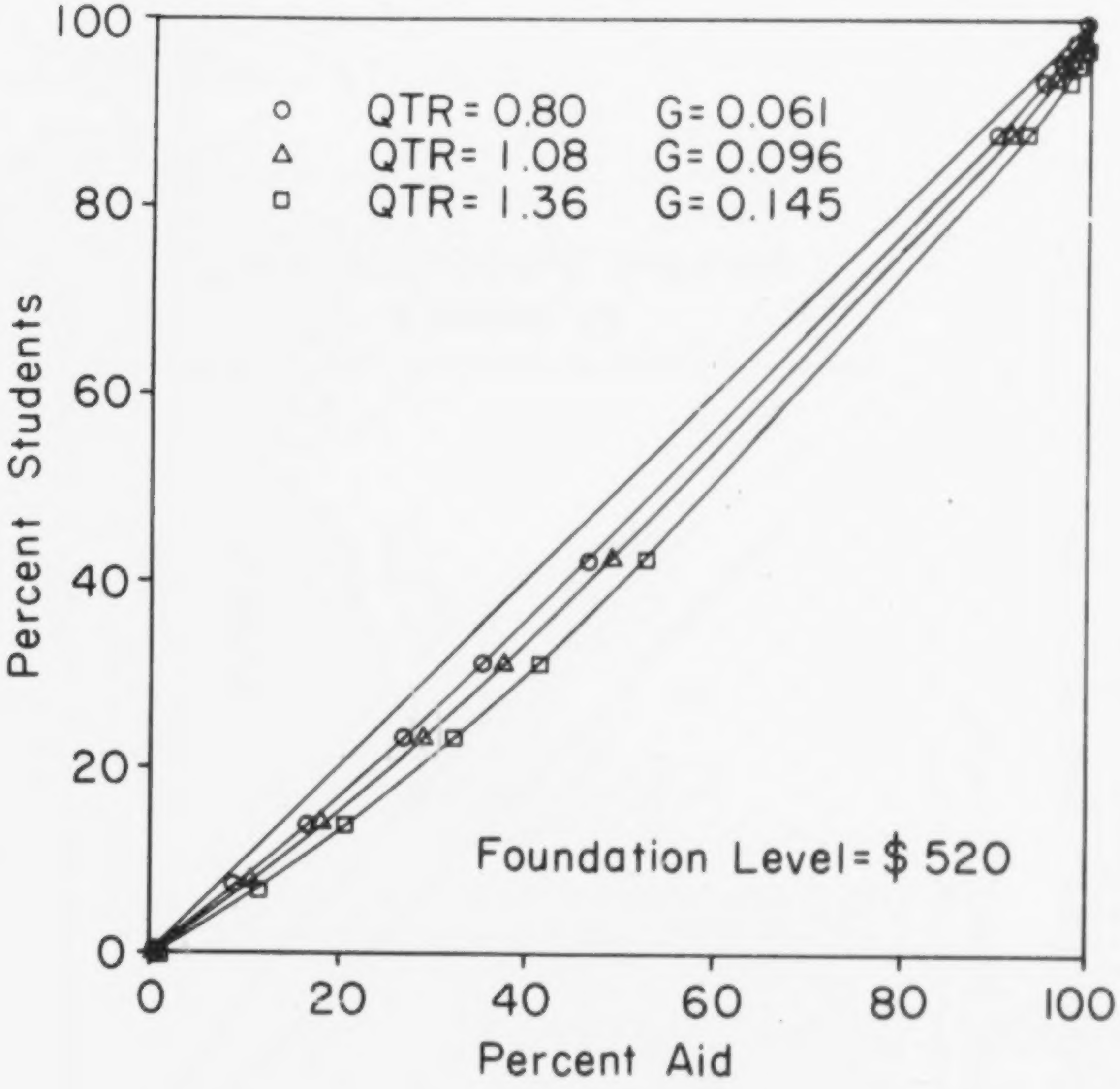
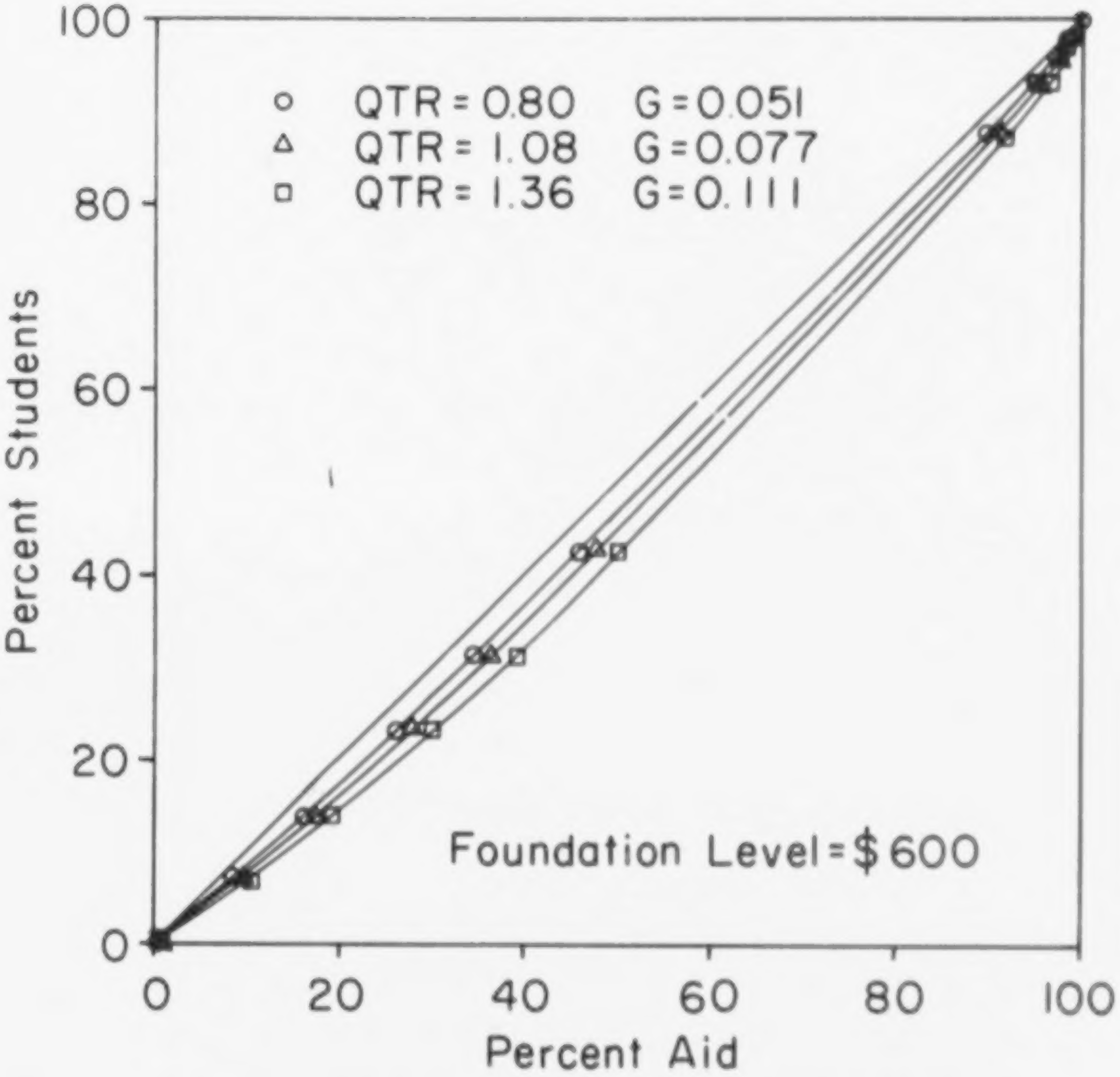


Figure 8: Combined State and Local Resource Effects shown by Lorenz curve.



(Lorenz Curve for Unit Districts)

Figure: 9: Example of Gini index and Lorenz curve using 1968-69 data for K-12 districts in Illinois.



(Lorenz Curve for Unit Districts)

Figure 10: Example of Gini index and Lorenz curve using 1968-69 data for K-12 districts in Illinois.

Some Major Issues in the Refinancing of Education in Illinois

by

A. J. Heins

I. WHY THE ADVISORY COMMITTEE WAS CREATED

Preliminary results of litigation in California, Minnesota, and Texas have forced the state of Illinois, as well as other states, to re-evaluate present methods of financing elementary and secondary education. Toward that end, the Superintendent of Public Instruction has appointed this Advisory Committee on School Finance.

The essence of the findings in the aforementioned litigation is that present modes of school finance, under which the level of spending for education depends upon the taxable wealth of the school district or parents, deny children their rights under the equal protection guarantee of the 14th Amendment to the U.S. Constitution. Put another way, the findings of law in the U.S. District Court for Minnesota were: "Plainly put, the rule is that the level of spending for a child's education may not be a function of wealth other than the wealth of the state as a whole." The courts have also paid due cognizance to the notion of "home rule" by noting that uniformity in school expenditures is not necessary to meet the aforementioned rule of law; and, that the "fiscal neutrality" notion embodied therein "allows free play to local effort and choice..."

Thus to meet the apparent test of the courts, it is up to the states affected by the litigation (presumably all states, including Illinois, will sometime be affected) to devise a structure of school finance in which educational expenditures in the various subdivisions of the state are not determined by the wealth of the subdivision, but may vary as between subdivisions by reason of other determinants of public choice. It strikes me that the work of this committee must be directed toward that objective.

(This is not to say that this effort should not have been made in the absence of successful litigation in other states. Indeed, it may be high time to undergo such a reevaluation of our structure of school finance. It merely states that any such reevaluation must pay due cognizance to the apparent findings of the courts and be guided by those findings.)

II. SOME LIMITATIONS ON THE EFFORTS OF THE COMMITTEE

Before talking about some issues the committee must consider, let me talk for a moment about issues we should avoid if possible. From early discussions it is apparent that some will wish us to evaluate the total tax structure of the state. They would have us consider means of replacing the personal property tax; they would have us examine the merits of raising state funds by increasing the income tax rate, graduating the income tax, or perhaps expanding the sales tax to cover services. I, too, have been long interested in these matters; but I think this committee would quickly stray off the key issue that led to its creation if it were to put these matters on its agenda of official concerns. For example, we were to decide to recommend that the state must double equalization and bloc grants to school districts. the issues surrounding the methods of raising the money must be left to another group. Were it to be otherwise, this committee would be quickly taking on all the problems of the state of Illinois and thereby make its efforts meaningless.

Then there are those that would wish us to concern ourselves with the design and quality of the educational program of the state. Such matters as programmed learning, advanced technology of education, curriculum, and the like would bedevil us and thereby water down the efforts of the committee. These concerns, to the extent they are state concern at all, must rest with another group that might be created to deal directly with them.

In short, I believe that the Advisory Committee should limit itself to delineating the general role of the state vis-a-vis the role of local districts in the financing of education in Illinois.

III. TWO CLASSES OF SOLUTIONS

One can quickly conceive of two general solutions to the problem posed by the courts. The first involves a total restructuring of the system of educational finance, and the second an augmentation of the present system. Within these general solutions, of course, are a host of specific solutions.

First, consider a solution under which the state removes the taxing power of school districts and subsequently finances schools with "equalized" grants from state resources. While school districts might continue as functioning political units for purposes of making decisions on the disposition of funds, it is clear that such a solution would be tantamount to creating one state-wide school district. The extent to which local option would exist under such a system depends, of course, on the nature of state regulations on the type of educational program for which funds may be expended by the local districts.

While a solution of this class would clearly meet the courts' criteria that quality of education not depend on local wealth (assuming that the formula for distribution of funds is reasonable), it would not allow for the free play of local choice in the scope of the educational program in the several districts of the state. Whether such a solution would stand other tests of constitutionality may not be clear. Nor is it clear that such a solution is in the total interests of the people of the state of Illinois.

Second, consider a solution under which present formulas for state aid to school districts are augmented so as to ensure that each district has sufficient funds from state resources to expend an amount on education equal to the average amount currently expended in the state with nominal tax effort on the part of the district. For example, the state might adopt a formula under which a school district's equalization allotment per student would be the difference between $800 and the per student revenue generated by a 10 mil property tax, with no minimum allotment. (The minimum allotment of $141 per student in Minnesota was cited by the courts as a major reason for holding for the plaintiff in that case.) This compares with the formula of $582, 1.08 mils, and $54 minimum currently operative in Illinois.

A solution of this type could significantly equalize educational opportunities in the various regions of the state; it also leaves room for the free play of local choice should some districts choose to expend more than the formula amount per student. However, it remains that wealthy districts would be able to exceed the $800 expenditure with greater ease than could poor districts; and thus that expenditures on education would remain a function of the wealth of the local district.

These illustrations make clear that meeting the courts criteria of equality (educational expenditures cannot be a function of local wealth) and allowing "free play to local effort and choice" are, in the extreme, incompatible objectives. Thus, it would seem that we must think of the problem as one of finding a solution that reasonably balances these two objectives.

IV. THE ISSUES THAT EMERGE

In looking at the specific solutions that might be chosen from the two aforementioned classes of solutions, what are the questions that emerge? Let me divide these questions into two classes, (A) implementation questions, and (B) "effect" questions, recognizing that effects depend on implementation, and that any recommendations as to implementation depend on perceived effects.

A. Implementation Questions

1. Assuming additional state resources will be necessary, how should the state raise the money? (As outlined in an earlier section, I believe this question should not be given serious or official consideration by this committee. It involves the total tax structure of the state, and as such should be left to another group constituted to consider the tax structure specifically.)

2. To what extent should equalizing allotments or grants deviate from the equal dollar notion to reflect differential costs of education and/or differential quality of student input? (This question arises whether a solution of the first or second type is adopted.)

3. What controls (if any) should the state place on local school districts in their disposition of funds? For example, should distinction be made between operating and capital expenditures? Or, what kinds of rules on program content or teacher qualifications should be established? (Where possible, this committee should avoid questioning the relative merits of

various educational programs. We should concern ourselves more with equality of the scope of the educational program, and leave design questions to another group.)

4. Should equalizing grants be based on property wealth of a district (the current basis) or some other measure such as taxable income? (Presumably, this question arises only if a type-two solution is adopted.)

When considering any of these questions, we must pay due attention to the political feasibility of particular solutions and the requirements likely to be established by the courts.

B. Effect Questions

1. What effect will any refinancing structure have on the total educational program of the state? (Let me illustrate this consideration. Were a solution of the first class adapted, the state program would depend totally on the actions of the state legislature. And, since the wealthy citizens of the state pay a much larger per-person share of state taxes, and since the program in their locale could be no better funded than other programs, the wealthy might opt for sending their children to private schools and exert pressure to restrain total state spending on education. It is a fundamental axiom that the decisions reached depend on the unit of government making the decisions. A shift from local decision-making to state decision-making will undoubtedly change the scope of the total state program. We must consider the magnitude and direction of such a change.)

2. What kinds of intra-state migration might be induced? What impact might restructuring of educational finance have on relative property values? (Suppose, for example, that a solution of the first class were

adopted and the resources were derived from a state administered property tax on an equalized basis. Some areas will find simultaneously that their property taxes decline and program quality improves. These areas will tend to experience in-migration and property values will be bid up. Other areas will find that the reverse holds true. We must consider the magnitude and societal impact of such a restructuring. Moreover, a substantive change of the second class may also induce these forces.)

3. What kinds of inter-state migration might emerge? (Since poor people in other states might observe that higher quality education might be obtained for lower taxes in some locales, in-migration from other states might result. Some residents may find it in their interests to move, perhaps to other states, if their tax share to finance education increases and the quality of their educational programs declines. We cannot ignore these forces.)

4. What impact will a change in the financial structure for public education have on private school (and hence, public school) enrollment in the state? (See question 1. for comments on this consideration)

5. To what extent will larger equalization grants (a solution of the second class) actually result in increased spending on the educational program of the recipient districts? (It is not clear that, since many districts tax themselves heavily, increased grants-in-aid for education will not be used for tax relief rather than augmentation of their educational program. It may be that such increased grants would meet the equality objections of the courts, but have little impact on educational expenditures in some poor districts. This could happen if the court ruled that this

situation reflects the "free play to local effort and choice." This committee might decide that such a solution, while meeting the objections of the courts, is not in the interests of the state.)

V. CONCLUSIONS

In general, I have tried to lay out what I think are (and are not) the major questions to be considered by this Advisory Committee. Others will emerge as discussion develops. In the meantime, a workable agenda for research and discussion could be developed from the above questions.

I do not mean to preclude consideration of financing structures that do not fall into the two classes I have outlined. For example, this committee might investigate the adoption of a voucher system of financing education in Illinois. But, no matter what approach is considered, the same general questions of implementation and effect arise.

Memorandum

to

The Superintendent's Advisory Committee
on School Finance

by

William P. McLure

February 22, 1972

I shall attempt to identify the major alternative fiscal policy changes in financing public elementary and secondary schools, assuming the California type case (Serrano v. Priest) is upheld by the U. S. Supreme Court. If the current suit of the Governor in Michigan to abolish the property tax for school support is upheld, the alternatives for that state would be limited, of course, as compared with California.

I am presenting a series of four charts to illustrate the major alternatives. These charts are arranged in a time dimension beginning with the year 1972-73 and extending to some dates as may be required by court orders, or otherwise that may be defined through policy making processes.

The alternatives may be viewed as steps in a developmental process which leads toward: (1) uniform equalization of expenditure per unit, and (2) total utilization of a state-administered tax system, supplemented by revenue from the federal government. The two major categories of expenditures (1) current operating expense and (2) capital outlay can be treated within these general models.

ILLINOIS PUBLIC SCHOOL FINANCE

--Alternatives for Policy Decisions and Action--

Time Dimension
↓

Chart I. 1972-73
(Alternative I)

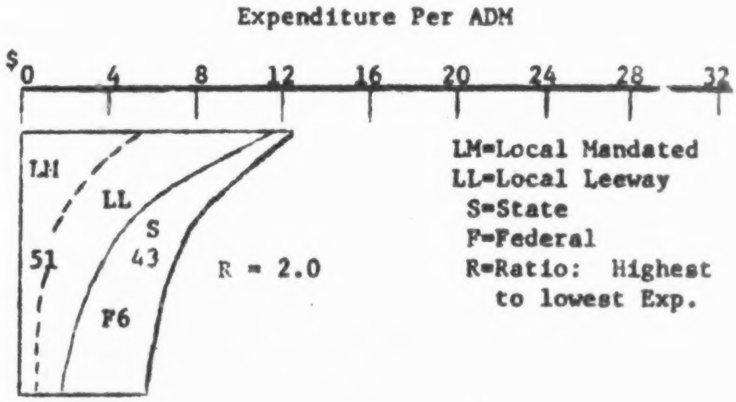


Chart II. 1973-74
(Alternative II)

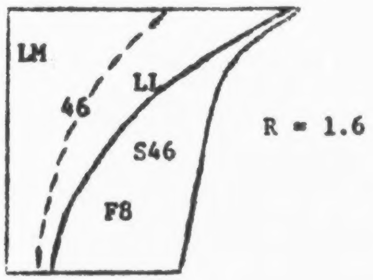


Chart III. 1979-80
(Alternative III)

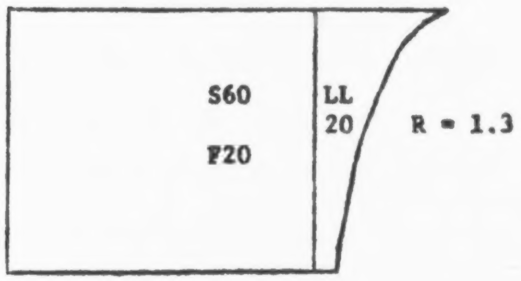


Chart IV. 1979-80
(Alternative IV)

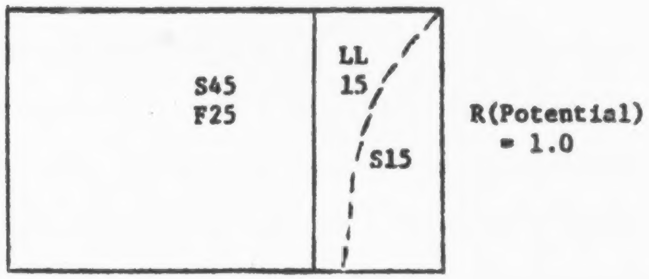
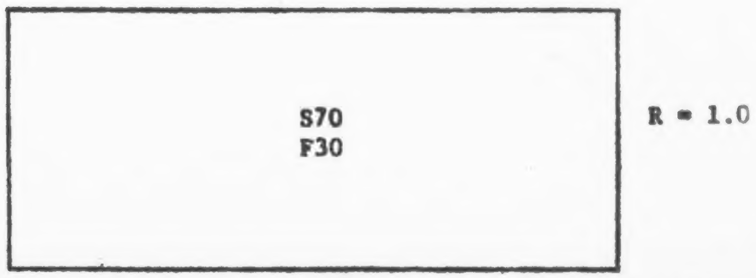


Chart V. ?, if ever
(Alternative V)



Alternative I, 1972-73. This alternative could be implemented in 1972-73. The objective would be to increase the degree of equalization of expenditures on one hand and tax burden on property on the other. The following are suggested changes:

1. Increase the local tax that is mandated (LM) by the state (qualifying rate) from $1.08 to $1.25 in Unit districts.
2. Make a comparable increase in the LM of Dual districts. Another option would be to reduce the present differential over a period of 5 or 6 years and abolish altogether this financial incentive for reorganization.
3. Change the unit of need from WADA to WADM, using all present weightings.
4. Raise the foundation level so as to reduce the ratio of expenditure from highest to lowest to 2.0 or less.
5. Simplify the variable flat grants.

These changes could be implemented in the 1972 session of the General Assembly. They would pave the way for the next step, Alternative II. Of course Alternative I could be skipped and Number II could be taken as the first step in 1973-74.

Alternative II, 1973-74. This alternative would involve more comprehensive changes than the first one, as follows:

1. Increase the local contribution (LM) from $1.25 to $1.50 in Unit districts.
2. Make a corresponding change in the LM of Dual districts depending on the policy adopted concerning the financial incentive for reorganization of Dual into Unit districts.

3. Introduce program cost differentials as a basis for computing units of need (WADM).
4. Establish guidelines for full allowance of reasonable costs of supportive services: (1) transportation, and (2) food service. (If the state can assume 80% of an allowable cost for transportation of handicapped pupils, why not do the same for all?)
5. Apply relative measures for the full cost of: (1) summer school, and (2) adult continuing education programs.
6. Option 1. Introduce a program for financing capital outlay, taking into account: (1) equalized instructional units of need based upon WADM, (2) full cost of adequate facilities, and (3) a distribution of costs comparable to operating expenses with outstanding local indebtedness included as part of the local contribution. Institute a program of statewide surveying of capital needs as a basis for establishing priorities to be funded annually.

   Option 2. The full cost of capital outlay could be assumed by the state from the outset.
7. Raise the foundation level, keeping in mind a reduction of the ratio from highest to lowest expenditure to about 1.6. Also, these changes should result in shifts in the contribution of local, state and federal governments to the total expenditure (current expense plus capital outlay). The estimated percentages in 1972-73 are 51--local, 43--state, and 6--federal. If the state increased 3% per year, and the federal 2% (reducing the local 5%) the distribution in 1979-80 could be 20--local, 60--state, and 20--federal.

Alternative III.

1. This alternative has two options for the state's share: (1) to adopt a state property tax (which I estimate at about $2.00) for the foundation and obtain the remainder (up to a total of about 60 percent of the total) from nonproperty taxes or (2) to mandate a LR (local qualifying rate of $2.00).

2. A local leeway (LL) would be allowed for districts to supplement the state foundation. This would amount to about 50 cents. The ratio (R) from highest to lowest expenditure would be about 1.3.

3. The federal contribution of 20 percent is close to the minimum (22%) recommended by the National Educational Finance Project. Other groups, too, have recommended from 20 to 30% as a range which would utilize effectively the federal tax system to contribute to equalization among and within states.

Alternative IV. If a strict definition of equalization is established, or at least a potential one, this alternative would provide a local leeway (LL) based on a resource equalizing potential. Thus, the 50 cent supplementary local leeway in Alternative III could generate potentially a second level of equalization. This alternative retains the last vestige of some local choice, and it meets the test implied in Serrano v. Priest.

Alternative V. This alternative is based on full state funding and central decision making, supplemented by federal funds. Equalization would be a uniform amount per unit of need. I am assuming that under these conditions the federal share might be increased to about 30 percent.

State funding can be based on (1) property and nonproperty taxes, or (2) nonproperty taxes.

Summary

1. I have made no assumptions about categorical aids. Most persons (I think) prefer to see these aids reduced to very few in number and size, limited almost altogether to research and developmental activities associated with innovations.
2. Note that the time dimension requires a consideration of rising expenditure levels as a function of inflation and other factors.

   In an appendix to these notes I have compiled some data to illustrate certain changes from 1960 to 1970. During that period we had an inflation of about 5 percent cumulative per year. In addition there was some betterment of the economic status of educational personnel, some increase in pupil ADA, and some expansion in programs.
3. In recent years states have been encountering increasing difficulty in setting foundation levels. This problem will become much greater the nearer full state funding is approached and the residual decisions at the local level are restricted to nominal scope, or eliminated altogether. What are the substitutes? Statewide salary schedules, centrally determined; state central approval of budgets; formulas or guidelines for preparation of budgets. These are a few examples of the procedures that might be associated with full or near-full state funding.
4. In the long run a budget approval method cannot be followed as a total system of evaluation and projection of educational needs. While

budgetary analysis is an essential process, other procedures will be necessary to assess public interests, demands, and objectives, and to translate these desires into program and financial terms.

The process of annualizing an equalized expenditure level for a whole state will require an entirely different approach from present practice though most if not all the basic determinants may be present. Some of the most crucial ones are: (1) Inflation, (2) scope of education (breadth of programs and services), (3) range of the target population (ages of entrance and graduation or termination), (4) relative economic status of the employed personnel to be maintained, (5) absolute improvement of the system (personnel, materials, and facilities that affect productivity or outcomes).

Appendix 1

Table 1

CHANGES IN REVENUES AND EXPENDITURES FOR PUBLIC ELEMENTARY AND SECONDARY SCHOOLS 1960 to 1970

	U. S.			Illinois		
	1959-60	1969-70		1959-60	1969-70	
Item	Amount	Amount	% Change	Amount	Amount	% Change
1. Curr. Exp.	$11,910M	$32,281M	171	$ 615M	$1,736M	182
2. Curr. Exp/ADA	369	766	107	402	831	107
3. Pupils ADA	32.282M	42.168M	30	1.530M	2.089	36
4. Cap. Outlay and D. S.	3,853.7M	6,017.2M	-	237M	327M	-
5. Percent #4 is of #1	32	19	-	38	19	-
6. Cap. Outlay and D.S./ADA	119	143	-	155	157	-
7. Local Revenue	7,595M	19,797	160	460	1,413	207
8. State Revenue	5,396	15,628	190	150	827	451
9. Federal Revenue	482	2,767	474	21	135	543

Source: NEA Research Division Estimates of School Statistics
1959-60; 1969-70; 1970-71 (with revised estimates of 1969-70).

School Finance Equalization Lawsuits: A Model Legislative Response

Arthur E. Wise

The University of Chicago

Prepared for the _Yale Review of Law and Social Action_

November, 1971

The California Supreme Court, in Serrano v. Priest on August 30, 1971, tentatively concluded that California's public school financing system denies children the equal protection of the laws because it produces substantial disparities among school districts in the amount of revenue available for education. In the words of the Court:

> We are called upon to determine whether the California public school financing system, with its substantial dependence on local property taxes and resultant wide disparities in school revenue, violates the equal protection clause of the Fourteenth Amendment. We have determined that this funding scheme invidiously discriminates against the poor because it makes the quality of a child's education a function of the wealth of his parents and neighbors. Recognizing as we must that the right to an education in our public schools is a fundamental interest which cannot be conditioned on wealth, we can discern no compelling state purpose necessitating the present method of financing. We have concluded, therefore, that such a system cannot withstand constitutional challenge and must fall before the equal protection clause.[1]

The tentative decision did not actually strike down the school finance system. The case was remanded to the trial court, which, if it determines that the facts are as alleged, apparently must find the system unconstitutional. The Court did not indicate what would constitute a constitutional school finance plan. However, a reading of the Court's opinion may begin to reveal what would be permissible.

The problems to which the case was addressed can be simply put. One school district expended only $577.49 to educate each of its pupils in 1968-69 while another expended $1,231.72 per pupil. The principal source of this inequity was the difference in local assessed property valuation per child: in the first school district the figure was $3,706 per child while in the second it was $50,885--a ratio of one to thirteen. Moreover, in the first citizens paid a school tax of $5.48 per $100 of assessed valuation while in the second residents paid only $2.38 per hundred--a ratio of over two to one.

1. Serrano: The No-Wealth Interpretation.

The first interpretation of the Serrano opinion is consistent with the proposition developed by Coons, Clune and Sugarman--"the quality of public education may not be a function of wealth other than the wealth of the state as a whole."[2] This proposition would permit educational quality to vary from school district to school district so long as each district had an equal capacity to raise funds for education. Thus, for example, a community that chose to tax itself at the rate of 1 percent might have available $400 per student, irrespective of the wealth of that community. A community that chose to tax itself at the rate of 2 percent might have available $800 per student, again irrespective of the wealth of that community. The state in this scheme commits itself to the specified level of expenditure per student regardless of what it raised by the local tax. The state gives aid in exactly the amount that local resources are insufficient to reach the specified expenditure. This scheme is known as "district power equalizing."

The California Court noted that "the United States Supreme Court has demonstrated a marked antipathy toward legislative classifications which discriminate on the basis of certain 'suspect' personal characteristics. One factor which has repeatedly come under close scrutiny of the high court is wealth." Concerning the implicit classification by district wealth, the Court said:

> To allot more educational dollars to the children of one district than to those of another merely because of the fortuitous presence of such property is to make the quality of a child's education dependent upon the location of private commercial and industrial establishments. Surely, this is to rely on the most irrelevant of factors as the basis for educational financing.

The Court thus found that the school financing system discriminates on the basis of the wealth of a district and its residents.

While the Court had substantial judicial precedent for finding wealth a suspect classification, it did not have judicial precedent for finding education a "fundamental interest." Such a finding was important for the theory which the Court was attempting to develop. Previously, the fundamental interest concept had been applied only to the rights of defendants in criminal cases and voting rights. The Court relied upon a number of decisions which "while not legally controlling" are "persuasive in the factual description of the significance of learning." The classic expression of this position came in Brown v. Board of Education:

> Today, education is perhaps the most important function of state and local governments. Compulsory school attendance laws and the great expenditures for education both demonstrate our recognition of the importance of education to our democratic society. It is required in the performance of our most basic public responsibilities, even service in the armed forces. It is the very foundation of good citizenship. Today it is a principal instrument in awakening the child to cultural values, in preparing him for later professional training, and in helping him to adjust normally to his environment. In these days, it is doubtful that any child may reasonably be expected to succeed in life if he is denied the opportunity of an education. Such an opportunity, where the state has undertaken to provide it, is a right which must be made available to all on equal terms.

These cases, together with the Court's own analysis of the importance of education, compelled it to treat education as a "fundamental interest."

The final step in the application of the "strict scrutiny" equal protection standard was a determination of whether the California school financing scheme as presently structured was necessary to achieve a "compelling state interest." Concluding that it was not, the Court declared:

> The California public school financing system, as presented to us by plaintiffs' complaint supplemented by matters judicially noticed, since it deals intimately with education, obviously touches upon a fundamental interest. For the reasons we have explained in detail, this system conditions the full entitlement to such interest on wealth, classifies its recipients on the basis of their collective affluence and makes the quality of a child's education depend upon the resources of his school district and ultimately upon the pocket-book of his parents. We find that such financing system as presently constituted is not necessary to the attainment of any compelling state interest. Since it does not withstand the requisite "strict scrutiny," it denies to the plaintiffs and others similarly situated the equal protection of the laws.

The no-wealth interpretation of Serrano would remove variations in local wealth as a factor in determining how much is to be spent on the education of a child. The capacity of each school district to raise funds would be equalized. However, local school districts would be permitted to decide how heavily they are willing to tax themselves and, consequently, how much they wish to spend on the education of their children. The no-wealth interpretation focuses rather more on taxpayer equity and rather less on educational equity.[3]

2. Serrano: The Equal Educational Opportunity Interpretation.

The second interpretation of the Serrano opinion is consistent with the proposition developed by the author--"the quality of a child's education may not be a function of where a student lives, what his parental circumstances are, or how highly his neighbors value education."[4] This proposition would prohibit variations in the number of dollars spent on any child by virtue of his place of residence. It would permit variations based on educationally relevant characteristics of the child. It would also permit variations based on such factors as differences in price-levels and economies of scale.

In the course of the opinion, the Court disposed of an argument "that territorial uniformity in respect to the present financing system is not constitutionally required." "Where fundamental rights or suspect classifications are at stake," said the Court, "a state's general freedom to discriminate on a geographical basis will be significantly curtailed by the equal protection clause." In support of this interpretation, the Court first relied upon the school closing cases in which the U.S. Supreme Court invalidated efforts to shut schools in one part of a state while schools in other areas continued to operate. Secondly, the Court relied upon the reapportionment cases in which the U.S. Supreme Court held that accidents of geography and arbitrary boundary lines of local government can afford no ground for discrimination among a state's citizens. "If a voter's address may not determine the weight to which his ballot is entitled, surely it should not determine the quality of his child's education." Consequently, it would appear that school finance plans cannot have different effects solely because of geography. In other words, neither wealth nor geography is a permissible basis for classifying children for the purpose of determining how much is to be spent on their education.

The equal educational opportunity interpretation of Serrano would require that educational resource allocation not depend upon where a student lives, what his parental circumstances are, or how highly his neighbors value education. One point which remains unclear in the opinion is whether the equal protection clause has been held to apply to children, to taxpayers or to school districts. If it is children who are entitled to equal protection, then it is difficult to understand how the quality of a child's education could be subjected to a vote of his neighbors. The equal educational opportunity interpretation would permit a variety of educational resource allocation standards. For example, the minimum attainment standard would require that educational resources be allocated to every student until he reaches a specified level of attainment. The leveling standard would require that resources be allocated in inverse proportion to students' ability; the competition standard would require their allocation in direct proportion. The equal dollars per pupil standard would assume that ability is an illegitimate basis for differentiating among students. The classification standard would require that what is regarded as a "suitable" level of support for a student of specified characteristics is suitable for that student wherever he lives within the state.[5]

3. Full State Funding

The years since a constitutional attack on current school finance legislation was proposed have seen an unprecedented level of activity directed at legislative reform. The concept of full state funding has entered the vocabulary of educational finance.

In a paper prepared at the request of the Education Commission of the States we stated:

> That the state should assume a large proportion of the cost of public education seems to many to be an idea whose time has arrived. It is attractive for a number of reasons:
>
> (1) There is a renewed concern for the inequalities which characterize the manner in which education is provided. This concern has been accentuated by the realization that gross inequalities in the financing of education are being challenged in the courts as violations of the United States Constitution.
>
> (2) Local support of education relies heavily on the property tax. This is the most poorly administered of all major forms of taxation. Furthermore, it is highly regressive, so that the burden of supporting education tends to fall heavily on low-income families.
>
> (3) Cost pressures, and particularly salary awards to teachers, are placing heavy strains on the existing fiscal structure, causing legislators, educators, and taxpayers to seriously consider alternatives.
>
> These forces are causing some states to consider seriously a shift in the support of education from the local district to the state. In Michigan, a gubernatorial task force recommended such a shift and Governor Milliken has expressed himself strongly in support of it. Such leading figures as James Conant and Commissioner of Education James Allen have taken similar positions. At the present Constitutional Convention in Illinois, proposals for state assumption of the responsibility for a high quality educational program for all children lead in the same direction. In Alaska, proposals have been made for a state-wide salary schedule for teachers.
>
> These proposals do not suggest that non-fiscal decisions be centralized. Local school districts would continue to exist, but they would give their attention to educational rather than revenue matters. Hawaii's structure of educational governance, a single school district for an entire state, is probably not appropriate for other states.[6]

The Advisory Commission on Intergovernmental Relations (ACIR), an appointed, bi-partisan intergovernmental agency representing federal, state and local branches of government, has recently taken a position on state financing of public elementary and secondary schools. The Commission has recommended that the States assume "substantially all" of the responsibility for financing local schools in order to grant property tax relief and ensure equal educational opportunity. The recommendation envisions replacing property tax revenue with income and sales tax revenues.

> Local schools are claiming more and more of the property tax take. At the beginning of the World War II about one-third of all local property tax revenue went to the public schools; now the school share is more than 50 percent - and still rising.
>
> Other local public services, the Advisory Commission believes, should have a stronger claim on the local property tax base. State take over of school costs would give local units of general government - cities, counties, and townships - a new fiscal lease on life. No longer would they be pushed off the local tax preserve by the school boards.
>
> The proposal is not utopian. At present, New Mexico, North Carolina, Delaware, and Louisiana for example are within striking distance of this goal. And Hawaii for many years has both paid for and administered all its public schools.
>
> What is involved is the substitution of State income and sales tax dollars for local property tax dollars. The change over could be gradual. However, as many as 20 States could assume complete responsibility for public school financing in the near future if they would make as intensive use of personal income and sales taxes as the "top ten" States now make on the average.
>
> When viewed alongside the resulting dramatic decrease in local property tax loads, State assumption of school financing loses its idealistic cast and becomes a realistic and equitable way of readjusting the total tax burden.
>
> The case for State take over of the non-Federal share of education costs rests in part on the conviction that this is the best way to make sure that the financial resources underlying public education are equalized throughout the State. Because the social and economic consequences of education are felt far beyond school

> district boundaries, States no longer can tolerate wide differences in the quality of education offered in its many local districts. Yet so long as each district has wide latitude in setting its own tax levy, great variations both in wealth and willingness to tax are inevitable. And these variables produce wide differences in the fiscal resources behind the students. As a result the quality of education today is shaped in large measure by the accidents of local property tax geography. [7]

The Commission thus views the concept of full state funding as not only desirable but feasible.

Governor William G. Milliken of Michigan has been endeavoring to achieve board reform in educational finance in that state for the last two years. In his "Special Message to the Legislature on Excellence in Education--Equity in Taxation" (April 12, 1971), he has called for: quality education for every child, a rational system of educational finance and equity of tax burden. Governor Milliken has proposed the virtual elimination, by constitutional amendment, of the property tax for school operating purposes. In its place, he would substitute an increase in the individual income tax and a value-added tax on businesses. According to his estimates, a 2.3% increase in the individual income tax would compensate for the loss on individually held property. In place of a corporate income tax, which according to him would be too high, he proposes a value-added tax of approximately 2%. The substitution of these taxes for the property tax would probably assure that revenues for education would increase over time. The increased elasticity of the tax structure would probably eliminate the need for regular increases in education tax rates. The Milliken Plan would have important consequences. It would remove the necessity for frequent school millage elections. It would replace the stable property tax with taxes which are more responsive to economic growth. It would eliminate the situation wherein some school districts with low tax rates are able to provide adequate levels of education, while others, with high tax rates, are unable to generate sufficient revenue. It would replace a regressive tax with taxes which are proportional and progressive.

More recently, it has been reported that the Fleischman Commission in New York State will be recommending full state assumption of the costs of education, imposition of a statewide property tax, stabilization of spending in wealthy school districts, and ultimately greater spending in districts with poor, disadvantaged youth. The concern for legislative reform of public school finance systems is fortunate because it is certainly envisioned that it is legislatures which will have to respond to possible court mandates.

4. A Slight Digression on Local Control of Public Education

The strongest objection to full state funding is the belief that it would result in a diminution of local school control. To be sure, the belief is most strongly voiced by those who wish to protect the economic advantage of taxpayers and students in the wealthier school districts. All that can be predicted with certainty at the moment is the loss of one element of local school control--the power of school districts to determine their level of expenditures. The projected loss of any other powers is purely speculative.

The assumption that local financing is inextricably intertwined with local control was called into question by James B. Conant in a speech before the Education Commission of the States in 1968:

> I would point out, however, that in the years in which I have tried to convince people of the importance and the correctness of our system here in the United States, I always assumed that local control of schools was a necessary consequence of local financing of the schools and vice versa. I think the New Brunswick example is a demonstration that this equation may well be wrong. It may well be that you can have local control of all the vital aspects of the public schools and still have the financing at the state level through state taxes and not through the local property tax.

On the issue of local control the Advisory Commission on Intergovernmental Relations has said:

> State assumption of school financing in the Commission's judgment is not inconsistent with effective local policy control. Ample room for local initiative and innovation would remain. Liberated from the necessity of 'selling' bond issues and tax rate increases, school board members and superintendents could concentrate on their main concern - improving the quality of their children's education. The long tradition of local control of education and the keen concern of parents for the educational well-being of their children would serve as sturdy defenses against any effort to short change educational financial needs.[8]

A former superintendent of schools in Maryland has said:

> We know from much experience that local control can operate with local financing; we have little experience upon which to determine whether it can survive under state financing. Thus we have only differing opinions rather than factual evidence upon which to base a decision, and one may take his choice. Reference to a personal experience may be useful here. For nearly 14 years I served as Superintendent of schools for a county adjacent to the state of Delaware, and enjoyed a close working relationship with a number of my counterparts in that state. Delaware, at that time, provided up to 90% of the total cost of operating the local school systems, whereas Maryland provided from 30% to 40%. I can testify that the local school systems of Delaware enjoyed at least as much, if not greater, autonomy than did those of Maryland. The reason for this, I suspect, would be found in the statutory powers given to state and local authorities in each case, and the roles assumed by the state authorities. I suspect that these factors have more to do with the presence of local control than the level of state funding.[9]

Congressman Dow, speaking in support of his proposed legislation to ease the local property tax burden for local educational costs, said:

> The principal objection I have heard to the plan contained in my school tax bill is the presumption that local school boards, if no longer responsible for raising school taxes, would lose local control of their educational systems, and that there would be a State takeover. To this criticism, I reply that in my own State of New York the State now provides 45 percent of the school support. With that much leverage the State could exert immense influence on local school decisions, even today; but it does not. Why? It does not for one reason, because the State legislature made up of local representatives would not allow it and, second, that is not the nature of our educational system. Nobody wants it that way.[10]

Congressman Dow makes an extremely important point. If states were inclined to assume control of local schools, they have had the financial leverage for years. They have certainly had the legislative power.

The only actual test of centralized financing and decentralized control has been in the Canadian Province of New Brunswick. The Advisory

Commission on Intergovernmental Relations, in its report on the New Brunswick experience concluded that the provincial takeover of school finance "leaves room for local administration and local discretion rather than necessitating centralized decision-making on the Hawaii model." 11 (Hawaii was, of course, established as a centralized school system in its pre-statehood period.) New Brunswick is still in the process of establishing new relationships centering on the shift from local to provincial financing. Moreover, there are enough differences between the Canadian and American situations to prevent direct comparisons. For example, curriculum was and remains a provincial responsibility, although efforts are being made to decentralize. Nonetheless, the New Brunswick experience suggests that substantial control can remain at the local level with centralized financing.

The argument that centralized financing will lead to a loss of local control is a largely untested hypothesis. At its worst, the argument is a smokescreen for opponents of equality of educational opportunity. At its best, the argument is an expression of concern for our public schools as we know them and wish to preserve them. We will not know the effect of full state funding on local decision-making until we implement it. In the meantime, the state is granting more of its educational resources to some children and withholding resources from others.

The arguments reviewed in this section question the assumption that centralized financing will lead to centralized control. None of the proponents of centralized financing advocate centralized control. All stress the importance of local control over crucial curriculum and personnel decisions. It is clear that the states have had the wherewithal to usurp local prerogatives if they were so inclined. Yet the concept of local control is so strong in American public education, it is probably its own sturdiest defense.

5. A Model Legislative Response.[12]

The specific plan outlined below was designed for the State of Maryland. The principles seem consistent with the second interpretation of Serrano and not inconsistent with the first interpretation of Serrano as discussed earlier. The principles may be feasible for many states. The proposal, in its detail, is surely not applicable to other states without modification. Major differences between Maryland and many other states are the fact that Maryland has only twenty-four school districts and the fact that expenditure variations are relatively moderate.

We begin with a definition of full state funding. Our concept calls for a school finance system which brings to bear all of a state's educational tax base on the education of all children in the public schools of that state. It provides for equity both in educational taxation and in educational resource allocation. It requires that educational resource allocation not depend upon where a student lives, what his parental circumstances are, or how highly his neighbors value education. It avoids the specious state/local distinction in the generation of educational revenues, for all taxes raised for education are, in fact, state taxes.[13] The definition clearly accommodates a variety of educational resource allocation schemes and systems for educational taxation. Its only essential characteristic is that there be equity in the benefits and burdens of education. The concept is compatible with the present system of local school control. A version of full state funding is explicated in the recommendations which follow.

1. It is recommended that the state assume financial responsibility for all public schools.

2. It is recommended that, over a period of three years, per pupil expenditures from state and "local" funds be equalized. The movement from the present mechanism of school finance to a full state funding mechanism cannot occur in a responsible manner in a single year. Substantial additions to revenues in poorer school districts cannot be judiciously accommodated at once. An increment of several hundred dollars per pupil in some school districts could not be planned for in an educationally and fiscally responsible manner. It is proposed that the new system be phased in over a period of three years. Thus a "freeze," with perhaps some accommodation for a cost of living increase, would immediately be placed on the highest-spending school district until the lowest-spending districts reach the level of the highest.

The effects on decision-making in the lower-spending districts would obviously be dramatic. The availability of substantial new revenues will lead to increases in educational quality only with careful planning and analysis. Those responsible for planning in the poorer districts will, for the first time, have the means to emulate the desirable characteristics of the landmark schools and school-districts. The onus on the planners will be heavy. The easiest step would be merely to increase the number of teachers in spite of the fact that there is no demonstrable relationship between educational outcomes and class size. The real task for the planners is to evaluate the efficacy of alternative educational arrangements. Indeed, in the poorer school districts, the leeway for local determination of goals and means will be substantially enhanced. The lack of available revenues will no longer be an excuse for failure to act on educational problems. As well, the importance of improved decision-making by wealthier school districts will be heightened. Wealthier school districts will be in a position of having to evaluate their alternatives more carefully. There will be no diminution of local responsibility for educational decision-making.

Phasing in a system of equalized expenditures per pupil will obviously require new revenues. A three-year period will permit a gradual assumption by the state of this responsibility.

3. It is recommended that the equalized level of per pupil expenditures in three years be set at the level of the highest-spending school district in 1971-72. The highest spending school district has in one sense defined for the state a conception of high quality education at least insofar as inputs are concerned. Moreover, to equalize expenditures per pupil at any but the level of the highest would mean interfering with the program currently operating in the high spending school districts.

4. It is recommended that, in order to allow for differences in economies of scale, the per pupil expenditure in any school may vary five percent in either direction from the equalized level. It is undoubtedly the case in education, as elsewhere, that the principle of economies of scale operates. In other words, it is probably the case that a reduction in cost per student occurs as school size increases up to a limit at least.[14] Studies of the economies of scale in schools has not resulted in definitive knowledge about how extensively the principle operates. As a starting point, we recommend that in any school per pupil expenditures may

vary five percent in either direction from the equalized level. It is assumed that per pupil expenditures will be higher in smaller schools and lower in larger schools. As more definitive knowledge becomes available, the five percent rule should be modified accordingly.

A second reason for this recommendation is to require a school-by school audit of funds in order to ensure that the effect of statewide equalization is not lost through misallocations within school districts.

5. It is recommended that, in order to allow for regional price-level differences, the per pupil expenditure in any school district may vary five percent in either direction from the equalized level. It is undoubtedly the case that regional price-level differences affect the cost of education. However, assessing the impact of such differences is difficult and the issue becomes intertwined with the question of quality. For example, housing and perhaps other goods and services for teachers are less expensive in rural areas. Consequently, it may be possible to pay somewhat lower salaries in rural areas. On the other hand, if rural salaries are much lower than average, rural districts may have difficulty in recruiting high quality teachers. Indeed, it is possible to argue that salaries in rural districts should be higher so that teaching in such districts may be perceived as more desirable. Because the question of regional price-level differences is so fraught with intangibles, it is proposed that no more than a five percent variation be allowed in per pupil expenditures in any school district. It is assumed that the higher expenditures will be found in the urbanized areas and the lower in the rural areas.

6. It is recommended that certain types of federal aid, notably Title I of the Elementary and Secondary Education Act (assistance for educationally deprived children), be allocated in addition to the equalized level of per pupil expenditure. The recommendation to grant compensatory aid to educationally deprived children in addition to state resources is a natural evolution of the present system and is in recognition of the special needs of such children. The federal government is now requiring "comparability of services" within a school district, before Title I, ESEA funds can be awarded. The reasoning is simple: federal funds can hardly be compensatory and supplementary until school districts are providing at least comparable services to schools which receive them. Under the proposed plan, the responsibility for comparability of services would be transferred from the local to the state level and, comparability would seem to be satisfied by a state's provision of equal per pupil expenditures. The effectiveness of Title I projects should be enhanced since educationally deprived children will already be receiving the benefits now enjoyed by children in affluent school districts.

7. It is recommended that certain types of federal aid, notably school assistance in federally affected areas, not be allocated in addition to the equalized level of per pupil expenditure. Certain types of federal aid are given merely to subsidize costs. "Impacted area" aid is currently the most important of this type. It is given to school districts which have experienced an influx of students because of a federal activity. It was established on the assumption, probably shaky, that federal employees would not be contributing their fair share of

school costs through taxes. Unlike Title I, ESEA, it is not given in recognition of the special needs of the children of federal employees. Under the present mechanism for allocating impact aid, the state should reduce its share of support in exactly the amount that a school district receives such aid.

8. It is recommended, for education purposes, the institution of a uniform statewide tax on property or a mandated uniform locally-imposed tax on property. It is further recommended that additional revenues for education be generated by other statewide taxes, preferably the income tax. There are two broad approaches which will achieve equalization of per pupil expenditures. Either is consistent with the concept of full state funding as we have defined it. Both will have the same effect with respect to equalizing educational tax rates and per pupil expenditures. The first is "full equalization" which is a system through which the same local tax effort in every school district of the state combined with state financial assistance will yield the same number of dollars per pupil. The second, full state funding, is a system under which the state assumes responsibility for providing a substantial portion of the funds for education and adopts policies which ensure that funds from all sources will yield the same number of dollars per pupil.

Both of these approaches can have as their object the equalization of per pupil expenditures. Both envision that all tax rates for educational purposes are uniform throughout the state. Their difference is one of degree, not kind, and in its most important dimension the difference is psychological. Under both systems a given taxpayer will pay the same taxes for the support of education. Under the first approach, it is likely that a larger portion of the education bill will be financed from locally-generated taxes; under the second, these same locally-generated taxes will flow first to the state, thence to be reallocated to local school districts. The full equalization approach appears to be a less dramatic change from our present system and, say some, is less likely to affect the sense of local control. On the other hand, when legislatures begin to act on equalization formulas, they inevitably "tinker" with them and the result is always decreased equalization.

A bolder approach is to opt for full state funding, placing the responsibility for educational finance squarely with the legislature. Perhaps, this approach will be less subject to tinkering by the legislature. It is more forthright and recognizes the correct interpretation that all school taxes are state taxes.

It is estimated that full state funding would increase the cost of education in Maryland by $200 million by 1974-75. In other words, Maryland would require approximately an additional $66 million dollars per year each year beginning in 1972-73. The cost of education in 1972-73, the first year of the proposed phase-in, is estimated to be $725 million. There are alternative ways of generating this revenue. In 1971-72, it is estimated that state and federal aid will already be providing $312 million, leaving an additional $413 million to be provided. A statewide uniform property tax of $2.00 per $100 of assessed valuation would yield $420 million, more than enough revenue to finance the proposed plan. At the present time, all school districts, save five, have local appropriations for education equivalent to levies in excess of $2.00 per $100.

Alternatively, adjustments in the state sales tax comparable to features employed in other states, would yield from an additional $33 million to an additional $82 million. Adapting the state income tax to the Oregon model (rates from four to ten percent and an exemption of $600 per person), would yield an additional $54 million from this source. [15]

The treatment of alternative tax sources is not meant to be definitive. Rather, it is meant merely to illustrate that the proposed full state funding plan is feasible in Maryland. On general tax burden for education, Maryland currently ranks in the middle of the states. With an expenditure of $50.73 per $1,000 of personal income, Maryland is just above the national average of $46.88, but below twenty-two other states. The highest state, Wyoming, spends half again as much ($72.73) for each $1,000 of personal income. In Maryland, there appears to be some leeway to increase school revenues.

9. Assuming the institution of these recommendations in 1972-73, the state will have achieved an equalized level of per pupil expenditure by 1974-75. At that point, the state legislature can begin to set levels of educational spending in competition with its assessment of needs for other public services. This recommendation recognizes that education is only one of a number of public services competing for a share of governmental revenue. From a statewide perspective, the legislature will be in a better position to assess these competing demands.

Summary. These recommendations taken as an interrelated set will result in a full state funding system of financing public education. There will be an equitable distribution of the educational tax burden. The quality of a child's education will not be a function of the wealth of his parents, neighbors, or school district. The state will be spending as much money on the education of all of its children as it has been spending on the education of its rich children. Having achieved equity in the distribution of the state's resources, the distribution of such federal funds as Title I, ESEA will become truly compensatory; the model thus recognizes the special problems of educating some children.

As was stated at the outset, what Serrano mandates is not clear. The model satisfies both interpretations of Serrano. The model satisfies the interpretation that the capacity of school districts to raise funds be equalized. It also satisfies the interpretation that all educational funds be made available to students on an equitable basis. If only the first interpretation is correct, then the model goes further than the California Supreme Court intended. If the Court did not intend the second interpretation, then the opinion is concerned with taxpayer equity and not equality of educational opportunity.

Footnotes

1. 5 Cal. 3d 584.

2. John E. Coons, William H. Clune III, and Stephen D. Sugarman, Private Wealth and Public Education. Cambridge: Harvard University Press, 1970.

3. For a more detailed analysis, see Arthur E. Wise, "Review of Private Wealth and Public Education," Saturday Review, April 17, 1971, p. 76 ff.

4. Arthur E. Wise, "Is Denial of Equal Educational Opportunity Constitutional?," Administrator's Notebook, February, 1965, pp. 1-4. Arthur E. Wise, Rich Schools, Poor Schools: The Promise of Equal Educational Opportunity. Chicago: University of Chicago Press, 1969.

5. For a more detailed analysis, see Wise, Rich Schools, Poor Schools, chapter 8.

6. J. Alan Thomas, Robert Jewell, and Arthur E. Wise, "Full State Funding of Schools." A paper prepared for the Education Commission of the States, March, 1970, pp. 1-2.

7. Advisory Commission on Intergovernmental Relations, State Aid to Local Government, April, 1969, pp. 4-6.

8. Ibid., p. 6.

9. Paul D. Cooper, "State Takeover of Education Financing." A paper presented at the National Tax Association Seminar, Washington, D.C. July 23, 1971, pp. 25-26.

10. Congressional Record, Vol. 117, No. 41.

11. ACIR, "Financing Elementary and Secondary Education," undated, p. 3.

12. The model was initially proposed in a report by the author to the Citizens Commission on Maryland Government which has been conducting a study of school finance in Maryland under a grant from the Ford Foundation. The assistance of Shelly Weinstein is gratefully achnowledged.

13. For a supporting analysis, see Wise, Rich Schools, Poor Schools, pp. 104-12.

14. See J. Alan Thomas, The Productive School. New York: Wiley, 1971. pp. 45-50.

15. John F. Due, "Alternative Tax Sources for Education," in Johns et al., Economic Factors Affecting the Financing of Education, National Educational Finance Project, Vol. 2, chapter 10, pp. 291-328.

The Superintendent's Advisory Committee on School Finance met February 22 in Chicago to discuss the four papers. Those participating in the discussion were:

G. Alan Hickrod
Raymond Lows
Fred Bradshaw
Robert Burnham
Robert Schoeplein
Arthur Wise
William McLure
Donald Strong
James Heins
Leo Cohen
Nicholas Michas

The dialogue ranged over many aspects of these papers for two hours. The following is a compendium of this disucssion.

"DEFINITION, MEASUREMENT, AND APPLICATION OF THE CONCEPT OF EQUALIZATION IN SCHOOL FINANCE" - Dr. G. Alan Hickrod

HICKROD: Going back to this, I see my notes are entitled A Sua Criticus, Self-Criticism. What will I do when I revise this paper? Well, one thing I am going to do certainly, having taken a look at the Fleischman Committee Report, is to make a sharper division between full state funding on the one hand and the partnership models or notion of joint funding between the state and the local community on the other.

The first part of the paper is the business of attempting to define equalization on a theoretical level. The thing that I am most uncomfortable with here is my lack of confidence in the concept of need. It is in this regard that I find the Fleischman Commission Report of considerable interest. The Fleischman Commission comes at need from a quite different point of view than I have seen in other publications. The notion of need is approached in the National Education Finance Project by means of differential costs and the differential cost of programs. As I read the Fleischman Committee Report, need is approached from the point of view of educational need and is operationally defined in terms of test scores from the statewide testing program that they have in New York. New York has a pupil evaluation program, which is a statewide testing program concentrating on reading and mathematical skills. The Commission found that it could recommend the distribution of funds on the basis of this statewide testing. Therefore, they are defining need in the terms of scores on achievement tests and particularly in terms of the scores on the third grade achievement tests in reading and in mathematics. A needy district is, therefore, a district which has a large concentration of low scoring pupils. This is, I think, an interesting and refreshing approach to the concept of need, which is not revoluntionary.

New York has had a distribution center called Urban Aid. It is essentially the same thing as the Commission's proposal. The major difference is that the Urban Aid distributed was about $40 million. The new provision calls for the distribution of $415 million which is rather a considerable difference. Of the $750 million new dollars which the Fleischman Report is asking for, $415 of the $750 is to be distributed on the basis of these test scores. So you have an approach which ties in a statewide pupil assessment program with the allocation system. I think that is the biggest contribution the Fleischman Committee Report made. This is something I am sure that other members of the Committee will wish to respond to and speak about later on because we will become deeply involved in the concept of need. At any rate, let it be recorded that I don't think I handled need very well in the front part of that paper and I will revise it.

In the middle part of the paper, I don't think I have too much there that I would want to revise. It was motivated by a dislike, really a distrust, of the Pearson Correlation Coefficient as a measurement of equalization. I kept reading the reports which tended to give me some rather uneasy feeling about using the Pearson Correlation. I came to the conclusion that it is not a terribly good way to measure the equalization effect. Then I began to scratch around for a new type of summarizing measurement for equalization and it appears that the economists technique of the Lorenz Curve and the Gini Index, the Gini Index Concentration, was a better tool to use in measuring this concept and its effect. I am sure that there are a number of other methodological procedures one can find for measuring equalization. The argument presented in the paper is that the Gini Index and the Lorenz Curve probably do a pretty good job. I am not really sure that I would make a lot of changes there. Incidentally, the regression coefficient doesn't do anything for you either, because the slope of the line in the regression coefficient rests on all the same assumptions which underlie the correlation coefficients. We really have to get something that can handle the problem better than that.

I suppose that when it comes to the last part of the paper, I'll make the most changes. As I said before, I believe in the application that I should make a much sharper division between full state funding on the one hand and the partnership models on the other. Dr. Wise talked in his paper about the difference between full state funding on the one hand and co-equalization on the other. He did a much better job on this than I. Professor Heins also makes reference in his two solutions to the general problem. That problem may have blurred the lines between these two solutions and again the Fleischman Committee Report helped me tremendously because the Fleischman Committee Report discusses full state funding. In the Fleischman Committee Report, there is no money added on at the local level, none. All funds come from the state level. I didn't have this before me at the time that I wrote my paper, so I couldn't make that sharp statement. That seemed to be a matter which could be made clearer. I am sure that we want to explore more fully this notion of the continuum of complete state support on the one end and complete local support on the other. Until the Fleischman Committee Report we didn't have a model on the books, so to speak, that allowed no money to be added on from the level. Professor Wise's recommendations for Maryland are similar, I believe, to the recommendations being made by Professors Guthrie and Benson for New York. There are some differences between those recommendations that spring from the difference in the situation in Maryland and that in New York. I think Wise had a little easier job, to be frank, than did Benson and Guthrie. The range of variations in New York is much, much greater than that in Maryland.

One final comment, I don't think I handled the application side well either. I spent a lot of time trying to explain ways in which money could be directed into poor areas. There are a great many techniques available for channeling funds into poor areas. The other side of that question, restricting wealthy districts in terms of the money they can add on, that's another and an extremely important part of this whole equalization concept. I don't think I handled it too well. I need to revise that when I know more about this very crucial business of restricting local add-ons or restricting local leeway. This was brought out especially well in Professor McLure's paper. He talks about allowing a 50% leeway. I am sure he will wish to expand on that a little. I don't think it comes out well at all in the paper that I did.

HEINS: I would make one comment. I think it's an exercise in futility to worry about or distinguish between the various measures of equality whether you are using the Gini Concentration Ratios or any technique until you can specify what the objectives are you have in mind. We don't even know anything about needs. If you haven't got any kind of an objective function, if you don't really know why it's better to have the Gini Coefficient smaller than the coefficient of variation, or something like that, then you don't have any motion about the utility or how that bears on the objectives of education. I think it really doesn't matter a whole lot, what device you use at all, since you can't really distinguish between them. I know economists can't distinguish between them on that basis at all and I think that point has been made clear, with all due modesty, by myself.

HICKROD: I think I got into this in trying to answer the question: Is one statement better than another relative to equalization? You can get a different answer depending on which of these measures you use.

HEINS: That's what I mean, it changes the rank ordering. You find Illinois 16th with the Gini Coefficient and 21st under the Coefficient of Variations and Iowa is just the reverse. What do you conclude about equality in Illinois? The answer is that you can't conclude a thing. To try to thrash this out over the merits of one coefficient over another is, I think, a fruitless exercise, at this stage anyway.

HICKROD: True. I think another important question is, however, whether or not a state does better in terms of equalization through time. I think it is an interesting point, Illinois for example, with the passage of the last six years has distributed more money but has it moved toward an equalization concept or away from an equalization concept?

HEINS: How do these coefficients tell you that? Run the Gini Concentration Ratio and you find that it's becoming less equal. Run the Coefficient of Variations and you discover that it's becoming more equal. Now what are you to conclude? The point is there is no, absolutely no objective way you can distinguish between the merits of those two coefficients until you specify what the objectives of equalizing education are. You see, each one of the coefficients has a different method of weighting the different tails and ends and middle parts of the distributions. Until you have some idea about what it is that those all mean, it really isn't going to help you very much. There is just no other way to distinguish between them.

"SOME MAJOR ISSUES IN THE REFINANCING OF EDUCATION IN ILLINOIS"

Dr. A. James Heins

HEINS: Well, my paper is very short. There are a couple of issues that I would like to emphasize by way of remarks. First of all, I think we should bear in mind that when we talk about the two classic solutions, and there are more than two, but these are the two that are commonly discussed. They are very different but go to the heart of the question of how compatible are the objectives of equalizing education and allowing free play to local choice. The fact is that these two objectives are incompatible. We can take the approach that equalization is of such importance that we just adopt it as the working principle and to hell with local choice. We have to recognize that that is what we're doing. I would like to see a constitutional lawyer talk about that question. It's not altogether clear to me that if we went to a full state funding system that it would meet the tests of constitutionality that will be involved. There are very few places in our constitution where we say explicitly that localities cannot do something. I worry about the constitutionality of legislation which in effect would bring that about in education. I think that is the question we're going to have to raise and I think it stems from this general incompatibility of objectives. I suppose we could view our task as one of balancing between equalization and retainment of the federalism that we hold dear, that is the allowance for free choice. Beyond that emphasis, I'll let the paper speak for itself. It's a more general paper than the other papers on the menu in the sense that it raises questions beyond the various methods of equalization. It asks questions about the effects of equalizing.

The other point that I want to emphasize is that if we decide in favor of a new financing structure which involves heavy state or total state participation, funding for education in this state will come out of the state legislature of this state. I for one have some misgivings about giving the state legislature the power to make decisions about what the educational program for this state will look like. This would be a framework in which I know there is not a thing I or any group of people getting together in the state could do about the decisions made. It wouldn't surprise me if we were to go to total state funding after ten years. There is just a tremendous human crying, griping and moaning about what can be done to improve our schools. I think this is a most important consideration that this Committee has to pay attention to.

COHEN: Would you clarify something for me? In the first part of the paper you say lets not worry about too many questions. You also say that the Committee shouldn't try to do much about the problems of the revenue side. Lets assume then that this Committee would make some recommendations of full state funding. I get the impression, maybe I'm misunderstanding you, that you are not worried as to what would come out of all of this. This is to say, we're pretty much at the mercy of the General Assembly so you can't be very optimistic about anything we recommend. It seems to me, if I understand you, we are back to the problem, whether it's this Committee or someone else making some recommendations, of whether state wide property tax for education or whether we have no property tax for education and we double our income tax or whatever. Am I misinterpreting what you are saying? You seem to be saying what difference does this whole thing make because whatever we recommend will be at the mercy of the General Assembly. We don't know what's going to come out in terms of implementing it anyway.

HEINS: No, I'm talking about the scope of the program. I recognize the dependence of scope on the tax method. Obviously, decisions about spending depend upon the taxes you have available to divide. I recognize that, but beyond that I'm just suggesting that whatever method of financing the legislature chooses to use to derive the extra money needed for full state funding, that political pressures will be brought to bear on the legislature that might make the scope of that program something less than what we recommend, maybe very equal, but shoddy. We all know when the members of the legislature make a decision to appropriate money that there are lots of pressures brought to bear on them. And those decisions are going to determine the total educational structure of this state. The scope of that program may be well below any one of our anticipations when we recommend that structure.

MICHAS: Are you questioning the ability of the state government to make decisions concerning education?

HEINS: The state government will make decisions. They have a beautiful ability to do it. They have all the ability to do it. I'm not convinced, however, that I'm going to like it.

MICHAS: In other words, you would like to retain control at the local level?

HEINS: Well, I'm prepared to be persuaded that I'm wrong, but I think that all I'm suggesting is that we devote at least some attention to the question. I don't know what the answer is. Obviously, I have some misgivings.

MICHAS: May I point out that in Canada where there is a high level of provincial funding the Provinces have greater control over the administration of education than the states have in this country. I don't think this can be too serious a problem but perhaps someone should look into it, some part of the Committee.

HICKROD: The question there is whether the level of control in New Brunswick has dropped or increased with the adoption of state funding. I admit, this is only one isolated piece of information. Whether it has gone up or gone down, I don't really have any answer to that, I have a feeling they have gone down quite a bit, I am not sure.

MC LURE: I think if you are going to make such a broad position on what you've indicated you know about the New Brunswick situation, this is a little appalling. I have an entirely different perception of what the Canadian school system is like and what the New Brunswick situation has to offer. I think we can make ourselves a very, very naive group if we use that kind of information just to confer about this kind of premise. I suggest that you really study the problem. I'm prepared to bring a great deal of input to this Committee if you want to pick the best kind of information to support that proposition, not that you would want to yourself, nor that the Committee might want to support it. The important thing to me right now is what we are talking about to Dr. Heins. Jim is discussing his value system. We all have a system of values and that's all you can base any educational system on. A system of values can never be proven scientifically, but we have to face up to it. The state will and we'll have to argue these things out with the best kind of information about them. It seems to me that the issue before us is not which is good or which we prefer at the moment but is a question of trying to identify these and begin working on them. I do think that we are going to have to really dig in if we are going to use hearsay or a few little written blurbs that a few people have who like to cite the New Brunswick experiment, or the Hawaii situation which is just about as aberrant. They don't take into account that in Hawaii when they were a territory, they knew nothing else except the central government. It's reasonable to understand why they moved into this state system easily. I think these are things that we would be well advised to really investigate if we are going to use them. I'm not criticizing, but I'm saying that I can't sit by and have us take a position unless we have a tremendous amount of information and depth.

HEINS: You brought an important element into the picture, the economy in state funding. Do you consider than an example?

MC LURE: Yes, that's a very important factor.

COHEN: I agree with the comment you made. I think it gets even more complicated unfortunately, depending on whether there are any legal restraints imposed. I am still overwhelmed at this point in time as to what the legal constraints are. Do we forget them? Do we assume there are no legal constraints or constitutional constraints and work from scratch? Or do we pay attention to what might be some legal or constitutional contention? I don't know the answer to that one. I would suggest that it would make the kind of question that you raise, which is relevant, even more complicated.

STRONG: I've been frustrated with reading through this whole thing. With Dr. Heins' paper I found myself finding a home. My problem is that I'm coming at this from a management point of view as opposed to a theoretical one. I'm a little hung up on the management of the ojectives and the task. I think we have to specify. One of the things we have to define is what is the legal framework that we're apt to be operating in. What is and what might be some of the issues? Once we decide what those options are then I think we ought to say, "Okay now what kind of options are open to us?" Then we can build a model on those things to see how they might be implemented. I think we then get down to the next level, Level 3, which is what the heck are we going to do with those things. What is the position to which this Committee will be responding, to what

Heins correctly identifies as a political milieu, rather than merely a theoretical one. When it's all said and done, that's where it's going to wind up. Is this Committee going to take a specific position? Is it going to take multiple positions? Are we going to present options? When are we going to lay out the timetable? Who's going to take what piece of the action? I really sense a cauldron boiling around us with all sorts of things coming in, political input from OSPI, from the governor's office, from the Federal government, from everyplace else. I would like to know where we're all going to sit in this thing so I can see where the December '73 meeting is going to be. What it's going to look like?

HICKROD: I share most of your frustration. I can say this as far as the recent commissions on price studies. They have gone into two different directions. The study completed by Professor Thomas and his associates at ISU took the final form of laying out options and not selecting any one of these options, but explicating a whole series of models. The approach of Professors Benson and Guthrie in New York was quite different. The approach they took was to endorse one option after having looked at other models. I haven't answered your question, but I have at least cited a precedent on both sides.

STRONG: I just repeat my question. What are we out for? When are we going to get at it? I'm ready to play any kind of role that anyone wants including taking a hard line position on what I happen to think might be at a given time and having it dissected on that basis. Is that how we're going to go?

SCHOEPLEIN: I'd like to make a remark to the question of what is our task. I also appreciate the question of timing. My question is, what are some of the responsibilities of the Advisory Committee? In Dr. Heins' paper I see two sets of questions - tax questions and the problem on equalization. With regard to the problem of school equalization, there are consequences to the selection of one alternative. My concern is this. If I may use the analogy of the highway programs in the 50's or 60's to deal with traffic congestion. The construction of highways started a chain reaction with regard to patterns of land development and so on which eventually looped right back into the highways again. With regard to consequences, if our time schedule permits, I would like to see some legislative committee give consideration to the consequences, to appreciate that alternative modes of school finance can indeed affect patterns of school participation, construction, etc.

HICKROD: Certainly state funding would have a tremendous effect on other public financing. This should not be overlooked by the Bureau of the Budget. I would like to comment on Dr. Heins' position that we should look at the revenue side of the problem. Most of the reports I've seen, certainly the one from New York, try to deal with this business of equity among taxpayers. One cause for action in the court suits has revolved around the business of two taxpayers paying unequal rates on the same bundle of goods and services. The approach in New York is to come at that from a statewide profit tax. This is an attempt to gain equity among the taxpayers by approaching it through a uniform statewide tax. If we don't deal with the revenue side, how are we ever going to tackle the business of equity among taxpayers?

HEINS: Let's clearly distinguish between those things. To talk about overall equity among taxpayers and the specific kinds of equity that they are talking about here are very, very different things. They are talking about the inequity derived from the use of property taxes to finance local education. This tax is at the discretion of the local school district. Obviously, what they are saying is that in two districts having essentially the same set of schools, one district will be paying $1.50 tax rate for those schools and the other district will be paying $2.50 tax rate. Those are the kind of inequities involved. If we moved to full-state funding, we could use any kind of tax and that problem would diminish. Then it would become simply a problem of statewide equity between the income tax and the sales tax and the various kinds of taxes. That is the issue that I want to see us stay away from. I know from the discussion we had last night that we are going to be pressured by people who want us to take up matters which are not really matter of school finance. These are the people who see this Committee as a potential vehicle for dealing with some other interest really not having to do with school finance, but rather having to do with the tax structure of this state. We have to do this on a continuing basis but I think it would be foolish for this Committee to be sidetracked along those issues. Note, that if we recommend going to full state financing, all I'm suggesting is that that recommendation is the main issue. We should not sidetrack ourselves and say now that we are going to full state financing, let's go out and do a tax study for the State of Illinois to decide if we'll raise the income tax 25% and the sales tax 10% or have a statewide property tax. These are the kind of issues that I don't think this Committee would be wise to get into very far.

MC LURE: I think I'm going along with you part way but when you said that we might not be going beyond the mere fact of saying that we're going to full state funding, I couldn't agree. I don't want to say what's equitable treatment of property vs. an income tax base, or what's inequitable in a sales tax system operated under the full system. But I don't think that in the field of school finance that we ought to duck the treatment of the question, or just treat some of the issues. We can at least survey the question, the full state funding proposition in terms of revenues to support it. Does that mean the state will obtain the property tax or adopt it as a property tax for administration and retain it? If so, what will it do with it? I think it would be quite proper for us to raise questions of this kind. I'm not about to duck the field of taxation. In the field of educational finance we were told twenty years ago to stay out of taxation. The tax experts ought to talk about that. Some of us disagreed and have become about as expert in taxation as the tax experts and I think we can't duck it. I don't want to, as you say, get into the depth about equity in the property tax, whether or not the state should take over commercial property and leave only household property or residential property. I don't think , at the moment, we need to decide precisely how far we are going to treat this property tax issue. Let's not get into a fight over what constitutes an equitable tax system. I am not willing to just go up to that point and just drop it, however, I think we would make a great mistake if we did that.

STRONG: I'll agree that that is the tail end of the chain. The first thing we ought to be attacking is what we want to do and what do we have to do. Second, what do we think the method or the methods are to accomplish what we want to do. Then we might want to say, "Okay, what are the options on funding that thing." We might at that point say, "Well option A looks like these funding options are a little more feasible. If you go B, I can see a pretty significant difference." In short, if you go full funding and decentralized local decision making, what kinds of options do you have open? I think it's the last link in the chain. We should get away from that for the moment and back to where we're going.

HEINS: I don't think we have any disagreement. I think that it is more of a matter of emphasis. I'm not suggesting we can't deal with these funding questions. But if we do, I want to avoid, if possible, getting sidetracked on some of the details of the funding that would be put upon us by people who are not interested in financing schools, whose interests are taxpayers trying to reap whatever advantage they can get out of us for the particular group of taxpayers they represent. That's all. I don't think there is any disagreement.

BURNHAM: It seems to me that you are saying is that we need to go far in our deliberations to determine what is politically feasible. We've got to know enough about potential tax structure and effects and consequences to decide what is economically and politically feasible.

HEINS: Sure, here is an example. Suppose we decided in favor of option A. We were going to recommend that. There are two options that we would support and each one of those would involve, in our estimate, increasing state revenues by $400 million per first year, $600 million the second year and so on, by some process. Then we might sit down and say what kind of ways the state can come up with this kind of money. We might recommend that the state adopt a statewide property tax of one kind or another which would generate so much of the revenue and the rest would come out of the general fund of the state which would involve an increase in the income tax and the sales tax by such and such an amount. We might specify those kind of things. I think that would certainly be appropriate for us to do as we go down the pipe. I don't think there's any problem with that. I suppose I'd like to say that we would do the kind of thing that they recommend in New York, which is freezing the property tax rate and then ultimately, as time passes, force the state to make up additional amounts out of other funds of taxes. We could talk about that too at that stage. But I'm talking about the details of the taxes that I saw emerge last time. Maybe we're way overworking it. Maybe I'm wrong in my estimate that we will be pressed to take up some of those matters.

"MEMORANDUM TO THE SUPERINTENDENT'S ADVISORY COMMITTEE ON SCHOOL FINANCE"

Dr. William McLure

MC LURE: I tried to lay out here in a few charts what I think is the direction in which this will be operating. I've indicated five alternatives as varying degrees of equalization from where we are up to as full and absolute equalization as anybody could conceiveable define it, by any measure of need that you might use or by any expenditure level per unit that you might define. One thing that bothers me about the dicussions of the Serrano case is the talk is all in dichotomous terms. I don't think of problems in such terms. I think our task ought to be to lay out some propositions along a continuum. I grant that we could take one position and go with that and not tell the public about the others and what we've thought of them or the extent to which we've explored them. My own bosses are in favor of packaging up four or five alternatives and then getting all the justification and explanation or consequences, if you will, of adopting one.

I think that when we talk about equalization, it is a relative matter as we use it traditionally. As I see it now, I would say this on a matter of measurement of need on a basis for equalization, I think that's a place where we have to start and the concept of equalization is no better than your position of measure of need and justification for it. All I have to say on that subject is what I wrote in that Chapter 6 of Volume 5 of the National Educational Finance Study. I really don't care to rewrite that for this Committee. I wrote that and it's available.

MC LURE: I want to comment on that very briefly. I am amazed really that they are willing to put all the eggs in one basket on that measure. The measurement people have not been able to get us much more than standardized tests. I have read their report. They talk about post and pre relative measures of achievement. They talk about the scores for the distribution of children that range all the way from a very low level to a high level. What they are really trying to accomplish, I would estimate, is to put more money in the areas of lower pupils on the presumption that lower scores are made by pupils from disadvantaged homes, lower income families, families of parents with low education. You are operating here what I perceive is a kind of crude measure of distributing money. Then we have to estimate the system's needs in terms of personnel and other resoureces to deal with those characteristics. If a school system has a high concentration of children with lower than the national or state norm, you identify these needs on the basis of taking those factions that will count or taking into account what you do in order to have this system to deal with them. The extent to which you can make prescriptions and the programs which you may prescribe are limited by the funds available and the state of the knowledge in the profession. Laying this aside, I would certainly say that our state aid system is just a little pregnant. In other words, in Illinois we have less disparity between the lowest expenditure districts and the highest than we would have if there were no state aid. There is a considerable amount of equalizing upward or reduction of disparity between the lowest and highest and this is part of the concept of equalization. As we move from the lowest toward the highest, we reduce the ratio among the principle districts. I'm not so much concerned about the extremes. I know that they exist, but nonetheless keeping in mind that few districts are extremely high or extremely low. In all probability, if the state could reorganize these districts the whole profile would look very different. My feeling is that in a study like this, we probably ought to start with a status quo of where we are in order to deal with the whole treatment of the subject. I have indicated a chart here which gives a very rough picture, about 51% of the support is from local money, most of that property tax as you know. I divided the chart to illustrate the principles we will have to deal with. The local mandated portion, that is, local tax mandated by the state, is represented by LM; the local leeway portion by LL. At present we have more of the local money in the local leeway portion than we do in the mandated portion.

HEINS: One question I have, Bill, your limitation of local leeway in the third model, could one not bring that in earlier?

MC LURE: Well, I did in Chart 2. One issue we will face is what to do about 1972-73. Actually the local mandated amount could be raised to $1.25 per unit district. Some corresponding change from the dual districts. If we're going to move to a different unit of need, one alternative might be to substitute WADM next year immediately to get the concept of membership established in a somewhat small step, although it wouldn't be entirely small for Chicago. That's at least one consideration or the strong argument on the other hand not to do that, but because it would be confusing to adopt WADM one year and then a year or two later to go to such a cost differential measure as I have suggested in Alternative Two, which I would be prepared to argue would be a more defensible measure. If it was decided to do nothing in 1972-73 that step would be omitted. I think we would be prepared to go to Chart Two or the second alternative. You will notice that each step that I'm suggesting is the kind of approach by which we gradually increase the mandated local portion and reduce the local leeway. These things work together. I think you've got a complex combination of things. You've got a wide distribution. You've got a clustering which you've suggested to get at and index, but there may be another one equally as good. We have a different approach in the National Educational Finance Project which gets at a degree of equalization. Any index of equalization might be worth trying. The third alternative would be a long step forward, reducing the ratio from the highest to lowest and that would certainly reduce the Gini Index, any step would do that as a matter of fact. You will notice that I have in these alternatives made the assumption that we would be expecting the Federal participation to improve to about 25 or 30 percent, 30 percent ultimately. This is a position, a valued position. Whether or not we want to take it is up to the committee. I don't see how we can do otherwise. As a matter of illustrating what might be accomplished. Charts 3 and 4 have two parts of the basic propositions. Chart 3 would allow some local add-on with the yield of the tax being just what the local district produced. Chart 4 would be an add-on of an equalized nature so that a poor district could generate as much resource as the wealthiest district.

HEINS: I have in mind here a foundation two formula, a foundation formula and a resource equalizer operating above it.

MC LURE: Yes, that's what it would amount to. Actually you could devise a formula which would start by treating all local money as a resource equalizer. As I take it, Serrano is more concerned with equalizing the potential resources of the district than generating the actual resources. It really didn't say they would have to be equal, but citizens have to have a choice for generating equal resources. We don't know whether the courts would require the equal amount. Neither do we know whether the courts would require equal amounts per instructional unit.

HEINS: There is a recent decision in New Jersey, Robinson vs. Hill, in which the courts did look upon a resource equalizer. It would be fair to say that the Court looked favorably upon this. It's complicated because they didn't exactly fully adopt it in New Jersey. They partially adopted it.

MC LURE: The Michigan case is one where the governor is suing a class of local districts and where he is specifying the equal amount of expenditure per pupil. If that case is tried on the facts and it is proved that an equal amount per pupil results in a better quality of education and if they are forced to use their test scores as they have in their quality program variation in the state of Michigan, it's going to be very interesting to see what happens.

COHEN: Do I assume correctly that Serrano, at least, is saying that local leeway can't be based on a question of the resources available in each district?

WISE: That would be my reading of Serrano.

COHEN: Local leeway is not ruled out, but this kind of local leeway is probably ruled out.

MC LURE: Unless it's very, very small, then we might say that a difference isn't tolerated. But we don't know that. I would guess that they would accept Chart 4 but not Chart 3 by a strict interpretation.

COHEN: How does Chart 4 work again?

BRADSHAW: You've got two things, the state could either take over and adopt all property tax up to some level and collect it for schools or it could abolish it and leave only the 50¢ tax rate. There's a common rate for all. Every buck whether it's over and above the state level, it's a state flat grant. Made up if it's under and tossed into the pot if it's over. Is that what it is?

MC LURE: You can see that it's a state grant. The state takes over property taxes. It's equivalent if it's mandated. If they keep the portion mandated, it's still the equivalent of a flat amount per unit. You could go into Chart 4 You could add on that third level. The third layer which would look like Chart 3 except that it would be squeezed down. An example here might be to say in Chart 4 that the state would put in 45 percent. They might put in 450 dollars into every district for every pupil. The Feds would put in $250 and the local leeway in the particular district that we are talking about here, they might put in $5 whereas the state might put in $25. A wealthy district might put in $25 with the equivalent tax rate and the state would put in only five dollars so that we would have equal access to dollars. Dr. Bradshaw is talking about putting a very large grant underneath the whole operation before you begin it.

BRADSHAW: Is that your model, Bill? With a big grant?

MC LURE: Yes, I use 700 dollars as the amount that would provide a basic education and then have the leeway beyond.

BRADSHAW: How does that sweat it off there at the end? I see the word power equalizing doesn't mean anything. For every penny of yield your going to get $2.41. If your local tax rate multiplied by assessed valuation doesn't yield it, you get it from the state. If it yields more, you throw the money in the pot.

MC LURE: I did not try to distinguish in Charts 3 and 4 between the issue of retaining the property tax and mandating at a uniform rate amount or having the state take it over. It seems to me that this is a political question.

If the state takes it over then the amount collected locally would be obscure. Just like today, the amount of income tax collected for schools is collected by the state and returned to the district. A very small amount of that is collected from the wealthiest district and sent to the poor districts.

In closing I would say that is reasonable for us to present some potential steps which might be considered for the state to move in the direction of Alternative 5 to some degree and leave open the question of how far it would go. This after all is a decision I presume the courts will make.

"SCHOOL FINANCE EQUALIZATION LAWSUITS: A MODEL LEGISLATIVE RESPONSE"

Dr. Arthur E. Wise

WISE: I think a key question is how fast the state will be required to move. I think it's pretty clear to you that I represent a rather extreme position, a position which can be arrived at in one of two ways. Firstly, out of a set of value preferences which was discussed earlier. Or secondly out of a reading of the U.S. Constitution and relevant parts of state constitutions. I arrived at the same place both out of my value system and out of my reading of the federal constitution and the state constitution. Apparently, as the cases have begun to unfold, there has been the feeling on the part of a number of judges that the constitution of the United States and state constitutions require greater equity in the manner in which we support schools. There is no substantial difference between the California decision and subsequent decisions in Texas and Minnesota. I think a new ingredient is injected by the New Jersey decision. The earlier court decisions were pretty much concerned, much more concerned, I would say, with taxpayer equity than equity for children. The proposition that the quality of education may not be a function of wealth other than the wealth of state as a whole is more a decision about taxpayers than a decision about children. To be sure there are some consequences about the amount of money for that children would receive. There are some tremendous inconsistencies in these cases, some of which would lead me to believe the courts said some things they didn't want to say. In any case, what the court was about there was establishing a basis for power equalizing. They attempted to use, they were thinking they were using, a legal theory which supported power equalizing. The taxpayers are to be taxed equally at any given level of educational standards. This requires a greater amount of state effort, state participation. It does not lead to, one has to be clear as to what one means, full state funding. The New Jersey decision is of a different order. I think the judge is talking not only to the taxpayer, but the quality of educational opportunity begins to be crudely defined as equal standing for pupils. I don't think that is necessary or desirable unless there is a way it seems to be brought about by many people.

> "The New Jersey system of financing public education denied equal protection rights guaranteed by the New Jersey and Federal constitutions. Education is one of the most important functions of state government. An educational opportunity for the state has undertaken to provide them is a right that must be made available to all on equal terms. Education is a fundamental interest vital to the interests of every citizen. Lines drawn on the basis of wealth or property like those of race are traditionally disfavored. Thus, where fundamental rights are asserted under the equal protection clause classifications will be closely scrutinized, etc."

I think it points toward a system that not only equalized the revenue raising function, but also equalizes educational standing. The important feature of the New Jersey decision is that it is based upon the New Jersey constitution. This is not so in the other case. If this case was affirmed by the New Jersey Supreme Court, as most people believe, it will be the law of the land in New Jersey, irrespective of what the United State Supreme Court will do. We may be seeing some rather immediate implications of one of these decisions at least. Many other people who are organizing suits are arguing that the system violates the state constitution.

I could go on about the difference here, but I think I would, just like for a couple of minutes, to talk about the plan that we proposed in New York. Maryland, of course, is a kind of ideal state, a textbook model one might say for considering these kinds of questions which we have been dealing with. It has a small number of school districts and relatively moderate variation in spending characteristics. We were asked by a group to advise them on a new system of school finance in Maryland. We did not follow the route that was decided upon by Mr. Benson, although we think we have designed a system which would have yielded the same results. What we proposed was a free spending in the highest spending school district in a period of three years so that per pupil expenditures in Maryland will be equalized to the level of Montgomery County, the highest county. Some flexibility would be allowed after that. The effect of that would be to increase very dramatically, especially in Baltimore City. It would be an increase of several hundred dollars of spending from state and local funds which would result in 3 or 4 hundred dollars in additional money for Baltimore City and in some rural counties. We would propose that on top of that Title I of the Secondary and Elementary Education Act be allocated in addition to state and local funds which would begin to reverse the spending pattern that we have developed. Let me just stop here and talk about how we have defined full state funding. There are some differences between it and some of the earlier definitions. The system which we designed for Maryland meets the New Jersey test, I would say, as well as the California test. It meets this definition of full state funding, but I think that there are some other definitions, other systems which will equally meet the definition of full state funding. Our concept calls for a state finance system which brings to bear all the state's education tax rates on the education of all children in the public schools of that state. It calls for equity both in educational taxation and education resource allocation. It requires that educational resource allocation not depend upon where a student lives, what his parental circumstances are, or how highly his neighbors value education. It avoids the specious state-local distinction in the generation of educational revenues. All taxes raised for education are, in fact, state taxes. The definition clearly accommodates a variety of educational resources allocations schemes for educational taxation. It's only essential characteristic, and this is what I think the courts are talking about, is the equity in the benefits and burdens of public education and I would assert that full state funding, as I have defined it, is compatible with our system of local school control. I think everyone believes most people in the United States that local control of public education is a good thing. A thing which should be preserved. I think it will be preserved, primarily because people want it to be. There have been instances in this country, the State of Delaware, for example, where the state has provided as much as 90% of the revenue of public education. Other states have provided 30% or 50% of the revenue for public education. If any state legislature had wanted to take over the schools in those states, they not only had the legal power, as vested in them by their state constitutions, they have also had that provided by having financed such a substantial portion of public education. It seems to me that we will continue to have local control because people want it that way, even if we do change the way in which we finance public education. What we cannot have is a system which gives greater amounts of the state's educational money to children who happen to come from rich families and lesser amounts to children who happen to come from poor families.

HICKROD: One question - What about a district in Maryland that needs more money than the 5% variance will allow? Can one conceive the needs or something that is in excess of this 5% variance?

WISE: I have trouble with any arbitrary figure. The one distinction between Maryland and any other state is that all of the school districts are equally divided, that is to say that one does not have any aberrations between the small districts and large districts on the scale. The problem is not as great when one has a large school district as when one has situations with small school districts.

MC LURE: Let's point out this fact, though, you've started with one of the most fundamental consequences of the state's centralization. You've started by making a decision at the state level that you would limit the free spending to three years. Then you will have to make a decision what to do about that at the time. So what you have done is started what will occur in many states, shifting the method of expenditure level is determined from the present traditional practice to either three or five wise men. This is the fundamental difference that I think should be pointed out. Ultimately, you would say that we are going to decide how much increase everybody gets and how much is contributed to inflation, cost of living. If, in fact, you are really equalizing all the things that money buys.

BURNHAM: How is this control vested in the local government in terms of expenditure levels come three years in the Maryland Plan?

WISE: Under this plan, presumably, the state would allocate to each school district a bundle of money for the number of kids in that district in Maryland. The local school district would then be treated to whatever seems fit for the education of its children. In fact, one could argue that the local board of education will have greater power than they have now, since they don't have to worry about money any more. They have to worry about education.

There is a definite direct contradiction between a system which guarantees equity and a system which allows the local leeway. My reading of the United States Constitution, however, would suggest that there is one of these values which is preeminent. It is that equity is preeminent when one is dealing with a public function. Liberty and equality have both played an important part in our nation. Except when one is dealing with the liberty of a local school district, or the local governing body. However, the constitution has been construed to require equity for individuals and this is what leads necessarily to some form of state financing.

HEINS: We are talking about gray areas. I could bring a suit in front of a court to take any particular kid away from his parents simply because he was born there without a legal subscription of his birth. I could plausibly come along and raise the question of a child's education in his ultimate development. How would we evaluate the family who raised him; the school he belongs to? If you're going to talk about equal opportunity or fundamental rights under the constitution within a family setting, these kind of issues arise too. Which are the values we hold highest and how are we going to balance them off in some sense?

There is one point I'd like to make and that is this question of equity among taxpayers. You are really on hard ground, I'll give you an example. You take some guy who moves close to his factory. It's a lousy place to live but he goes there because he pays $100 a year property taxes and he paid a certain value for his house. Now you're going to come along and re-finance education. You are going to increase his taxes five times and take away a quarter or a third of the value of his house. You go and talk to him and explain to him what equity is. This whole question of equity on a tax base is a very complex and difficult question. It's not true that when everybody pays the same tax rate on a house, that there is an equitable situation at all. When you open this whole question of equity in the face of the fact that people have made property commitments because of the tax structure, this equity business becomes very quickly muddy. I don't think that it's a safe presumption at all that if we move to a statewide property tax with uniform rates that suddenly we can get at equity. I don't think that it's necessarily true at all. We might find some wholesale realignments. You will have some people who are going to win bundles and some people who lose bundles. It may be the right people winning and it may not be. Once you get into this whole